justed family income shall be an amount determined in the following manner:

(a) Determine effective family income by subtracting from the annual adjusted family income the amount of Federal income tax paid or payable with respect to such income.

(b) Determine discretionary income by deducting from the amount calculated in paragraph, (a) of this section the following:

(1) *Family size offset*. A family size offset is the amount specified in the following table. Family members include the student and his dependents. If the student is divorced or separated, family size shall include any person whose income is taken into account for the purpose of computing the annual adjusted family income and his or her dependents.

FAMILY SIZE OFFSETS

| Family members: | *Dollar amounts* |
|---|---|
| 2 | 3,850 |
| 3 | 4,650 |
| 4 | 5,900 |
| 5 | 6,950 |
| 6 | 7,900 |
| 7 | 8,750 |
| 8 | 9,650 |
| 9 | 10,550 |
| 10 | 11,450 |
| 11 | 12,300 |
| 12 | 13,200 |

An offset of $1,050 shall be made for the single independent student.

(2) *Unusual expenses*. The amount by which the sum of medical and dental expenses, and losses resulting from catastrophes incurred in the base year and not compensated by insurance, exceeds 20 percent of effective family income. Unusual expenses may be deducted if they were incurred by the independent student and his dependents during the base year.

(3) *Employment expense offset*. An employment expense offset in an amount equal to 50 percent of the adjusted gross income earned in the base year by either a married independent student or the student's spouse, whichever is less, or 50 percent of the adjusted gross income earned during the base year by an independent student qualifying as a surviving spouse or as head of household as defined in section 2 of the Internal Revenue Code but in no case shall such an offset exceed $1,500.

(4) *Educational expense offset*. The amount of mandatory and unreimbursed tuition paid during the base year by the independent student and his or her spouse for dependent children enrolled in an elementary or secondary school.

(c) Determine the expected family contribution from the family income of the independent student and his or her spouse by applying the following rates to discretionary income:

(1) 75 percent of discretionary income for the single independent student with no dependents;

(2) 50 percent of discretionary income for the married independent student with no dependents other than spouse; and

(3) 40 percent of discretionary income for the independent student who has dependents other than spouse.

(20 U.S.C. 1070a(a)(3)(C).)

## § 190.44 [Reserved]

## § 190.45 Computation of expected contribution from the assets of the independent student and his or her spouse.

(a) Except as provided for in paragraph (b) of this section, the expected contribution from the assets of the independent student and his or her spouse shall be determined in the following manner:

(1) Determine the total amount of net assets owned by the student and the student's spouse.

(2) The contribution from assets shall be an amount equal to 33 percent of the amount determined in subparagraph (1) of paragraph (a) of this section.

(b) (1) If the calculations required by § 190.43(b) produce an amount of negative discretionary income as defined in subparagraph (2) of this paragraph the expected contribution from the assets of the student and his spouse calculated in paragraph (a) of this section shall be reduced by the amount of such negative discretionary income.

(2) The amount of negative discretionary income is the amount by which the sum of deductions for offsets and expenses set forth in § 190.43(b) exceeds the amount of income determined in § 190.43(a).

## § 190.46 Computation for expected contribution from annual adjusted family income and assets adjusted for number of family members attending institutions of postsecondary education.

(a) For each grant the amount expected from family income as determined in § 190.43 shall be added to the amount expected from assets as determined in § 190.45.

(b) For each grant the combined expectation determined in paragraph (a) of this section shall be further adjusted in the following manner to take into consideration the number of family members who will be in attendance, on at least a half-time basis, in programs of postsecondary education during the academic year for which basic grant assistance is requested:

| *Number of family members attending institutions of postsecondary education* | *Expected contribution from combined contribution per student* |
|---|---|
| 1 | 100 percent of contribution from the amount determined in paragraph (a) of this section. |
| 2 | 70 percent of contribution from the amount determined in paragraph (a) of this section. |
| 3 | 50 percent of contribution from the amount determined in paragraph (a) of this section. |
| 4 or more | 40 percent of contribution from the amount determined in paragraph (a) of this section. |

Family members shall include any person whose income is taken into account for the purpose of computing the annual adjusted family income and his or her dependents.

## § 190.47 Computation of the total expected family contribution.

For each grant the total expected family contribution shall be the expected contribution from discretionary income and assets, as determined in § 190.46.

## § 190.48 Extraordinary circumstances affecting the expected family contribution determination for the independent student.

(a) An applicant may submit an application to the Commissioner, for determination of the applicant's expected family contribution, (or, if such an application has previously been submitted, may submit a new application) which shall use as the base year for this purpose the tax year subsequent to the base year established by the Commissioner if:

(1) A spouse whose income was included in the calculation of expected family contribution as determined in § 190.43 has died in the base year or the tax year subsequent to the base year, or

(2) A spouse whose income was included in the calculation of the expected family contribution as determined in § 190.43 has experienced loss of employment of at least ten (10) weeks during the tax year subsequent to the base year, or

(3) An applicant or spouse whose income was included in the calculation of the expected family contribution as determined in § 190.43 has been unable to pursue normal income-producing activities for a period of at least 10 weeks during the tax year subsequent to the base year by reason of: (i) Disability or (ii) loss or damage to income-producing property as a result of natural disaster, or

(4) The applicant has become separated or divorced since the time he submitted his application, or

(5) The applicant was employed for at least 35 hours per week for a minimum of 30 weeks during the base year and will not be comparably employed during the tax year subsequent to the base year.

(b) An application submitted pursuant to paragraph (a) of this section shall include the annual adjusted family income received for the newly established base year, i.e., the tax year subsequent to the original base year. If necessary, an estimate of the annual adjusted family income shall be provided for the remainder of such year.

(20 U.S.C. 1070a(a)(3)(B)(i)(V).)

[FR Doc.77-18456 Filed 6-29-77;8:45 am]

federal register

THURSDAY, JUNE 30, 1977

PART VI

# SECURITIES AND EXCHANGE COMMISSION

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## OFF-BOARD TRADING RESTRICTIONS

## SECURITIES AND EXCHANGE COMMISSION

[ 17 CFR Part 240 ]

[Release No. 34-13662; File No. 4-180]

### OFF-BOARD TRADING RESTRICTIONS

AGENCY: Securities and Exchange Commission.

ACTION: Notice of Proceeding and Proposed Rulemaking.

SUMMARY: The operating legislating of the Commission requires review of off-board trading restrictions and the elimination of those restrictions imposing burdens on the competition not necessary or appropriate. The Commission has given notice of a proceeding, including public hearings, to consider the amendment of rules of national securities exchanges which limit or condition the ability of members to effect transactions over-the-counter in listed securities and to consider the adoption of certain Commission rules to accompany any such action.

DATES: Public hearing: August 1, 1977. Comments by August 10, 1977. Reply comments by August 24, 1977.

ADDRESSES: Public hearings will be held in Room 776, Securities and Exchange Commission, 500 North Capitol Street, Washington, D.C. 20549. All submissions should refer to File No. 4-180 and be delivered, together with 30 copies, to George A. Fitzsimmons, Secretary, Room 892, at the above address. Copies of all written submissions and hearing transcripts will be made available at the Commission's Public Reference Room, 1100 L Street NW., Washington, D.C.

FOR FURTHER INFORMATION CONTACT:

George T. Simon, Division of Market Regulation, Room 390, Securities and Exchange Commission, 500 North Capitol Street, Washington, D.C. 20549. (202-376-7470).

SUPPLEMENTARY INFORMATION: The Securities and Exchange Commission today announced a proceeding, pursuant to Section 19(c) (15 U.S.C. 78s (c)) of the Securities Exchange Act of 1934 ("Act") (15 U.S.C. 78a et seq., as amended by Pub. L. No. 94-29 (June 4, 1975)), to consider rulemaking to: (i) amend existing rules of national securities exchanges ("exchanges") which limit or condition the ability of members to effect, as principal or as agent, transactions in securities listed or admitted to unlisted trading privileges on an exchange ("listed securities") otherwise than on such exchanges ("off-board trading restrictions"); and (ii) govern, in the event off-board trading restrictions are amended, over-the-counter transactions in listed securities between dealers and certain categories of persons.

In connection with this proceeding, the Commission will conduct public hearings commencing August 1, 1977, at the Commission's headquarters in Washington, D.C. In addition, interested persons are invited to submit written presentations of views, data, and arguments concerning the rules proposed and issues discussed in this release, as well as written presentations responding to written or oral presentations of others.

The exchange rules upon which this proceeding will focus have previously been the subject of Commission and Congressional studies, as well as prior public proceedings involving both the Commission's investigatory and rulemaking responsibilities under the Act (including adoption in 1975 of Rule 19c-1 under the Act (17 CFR §240.19c-1), removing certain off-board trading restrictions).[1] Indeed, since 1968, the Commission has been giving continuous consideration to appropriate steps to assure the efficiency, fairness, and integrity of trading markets for securities through the establishment of a national market system. The present stage of this extensive deliberation with respect to market structure emanates from the actions, deliberations, and proceedings which have preceded the proceeding announced today. Accordingly, the attention of interested persons is directed to these materials, cited or referred to elsewhere in this release, copies of which are available at the Commission's Public Reference Room (File No. 4-180).

The information contained in these materials is relevant to and was relied upon in the formulation of the rules proposed and issues discussed in this release. While a restatement of views previously expressed and considered is, therefore, not necessary, persons wishing to participate in this rulemaking proceeding may, of course, refer to any materials previously considered (and may articulate relevant views previously presented) in connection with this proceeding.

The Commission will also consider the written submissions to the Commission by the National Market Advisory Board ("NMAB"), together with written submissions to the NMAB by interested persons, received to date (and any others which may be forthcoming prior to the conclusion of this proceeding) concerning off-board trading restrictions and other issues relating to the development and implementation of a national market system. Persons interested in inspecting any of these NMAB materials should also consult File No. 4-180 at the Commission's Public Reference Room.

### I. INTRODUCTION AND BACKGROUND

Section 11A(c)(4) of the Act (15 U.S.C. 78k-1(c)(4)), as amended by the Securities Acts Amendments of 1975 ("1975 Amendments") (Pub. L. No. 94-29, 89 Stat. 97 (June 4, 1975)), directed the Commission to review all exchange rules "which limit or condition the ability of members to effect transactions in securities otherwise than on such exchanges." That Section further directed the Commission to report the results of its review to the Congress and to commence a proceeding, pursuant to Section 19(c) of the Act, "to amend any such rule imposing a burden on competition which does not appear to the Commission to be necessary or appropriate in furtherance of the purposes of (the Act)." On September 2, 1975, the Commission reported the results of its initial review pursuant to Section 11A(c)(4) to the Congress.[2] In that report, the Commission stated that certain off-board trading restrictions impose burdens on competition which the Commission was not prepared to conclude were necessary or appropriate in furtherance of the purposes of the Act. Accordingly, the Commission simultaneously issued a release instituting a proceeding, pursuant to Section 19(c) of the Act, to determine whether to modify or eliminate those off-board trading restrictions.[3]

The September Release proposed, and solicited comment on, three alternative forms of a Commission rule amending (to various degrees) exchange rules imposing off-board trading restrictions on members and announced that the proceeding would seek to determine:

(i) The extent to which existing off-board trading restrictions engendered significant anti-competitive effects;

(ii) Whether, although such restrictions were anti-competitive, there were countervailing considerations which outweighed the need to eliminate or limit such restrictions at that time; and

(iii) Whether such restrictions could be appropriately modified so as to further the purposes of the Act.[4]

The Commission held eight days of public hearings concerning its proposals to amend off-board trading restrictions during October, 1975, and received numerous written submissions concerning these proposals and related issues from representatives of the securities industry, the public and government agencies ("October Hearings").[5] On December 19, 1975, the Commission announced the results of its rule making in the December Release and adopted, effective March 31, 1976, Rule 19c-1 under the Act.[6]

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[1] See Securities Exchange Act Release No. 11942 (December 19, 1975), 41 FR 4507 (1976) ("December Release").

[2] SEC, Report of the Securities and Exchange Commission on Rules of National Securities Exchanges Which Limit or Condition the Ability of Members to Effect Transactions Otherwise Than on Such Exchanges (September 2, 1975) ("September Report").

[3] Securities Exchange Act Release No. 11628 (September 2, 1975), 40 FR 41808 (1975) ("September Release").

[4] Id. at 3.

[5] See December Release, supra note 1, at 60-61, nn. 9 & 10. File No. 4-180 includes copies of the transcript of and written submissions made in connection with the October Hearings. For a bibliography of certain source materials relating to off-board trading restrictions, see September Release, supra note 3, at 51-57. See also December Release, supra note 1, at 61-62, nn. 11 & 12. Additional source materials which have become available since publication of the December Release are cited infra. In addition to materials relating directly to the proceeding, File No. 4-180 includes copies of the written views of the NMAB furnished to the Commission and certain written submissions made to the NMAB.

[6] See note 1 supra.

Rule 19c–1 amended exchange rules which theretofore prevented exchange members from effecting over-the-counter agency transactions in listed securities which are equity securities ("listed equity securities") with third market makers[7] and non-member block positioners.[8] Although the Commission determined that other off-board trading restrictions, precluding members from executing over-the-counter transactions in listed securities as agent "in-house," by crossing customer orders or otherwise ("remaining off-board agency restrictions"), or as principal ("off-board principal restrictions"), have anti-competitive effects, effects the Commission believed were significant in the case of off-board principal restrictions, the Commission determined at that time to allow those restrictions to remain in effect pending further review.[9]

In particular, although the Commission found that off-board principal restrictions deprive the markets of "the benefits which the Commission believes would be derived from improved market maker competition,"[10] the Commission decided that further study was necessary concerning the "timing of [the] elimination of these restrictions, and the need for implementation of additional regulatory and technological changes to ensure that [market maker] competition develops in a fair and orderly manner," prior to amending or abrogating those restrictions.[11] The Commission stated, however, that it would:

> [R]econsider this decision * * * after it has had the benefit of the conclusions and advice of the National Market Advisory Board and progress by that date toward establishment of a national market system, and, if it still appears appropriate, will establish a firm date for elimination of exchange rules governing off-board principal transactions, after which over-the-counter market making by member firms will be permitted.[12]

As to remaining off-board agency restrictions, the December Release recognized that it remained for the Commission to determine whether those restrictions are anti-competitive "in significant ways,"[13] and what, if any, action should be taken with respect to them. The Commission, however, promised to devote further study to those restrictions and solicited comment on them from the NMAB.[14] The NMAB's views with respect to remaining off-board agency restrictions applicable to "in-house" crosses were supplied to the Commission in September, 1976.[15]

On February 25, 1977, the NMAB expressed its tentative conclusions with respect to off-board trading restrictions as follows:

> The Commission having found that off-board trading restrictions are basically anti-competitive, the Board concludes that the purposes of the * * * [Act] do not justify exchanges maintaining such restrictions generally and indefinitely. However, the Board favors removing such restrictions gradually and with caution.[16]

The NMAB further advised the Commission that it would elaborate upon its recommendation in May, 1977.

On May 19, 1977, the NMAB delivered to the Commission a full statement of its recommendations with respect to off-board trading restrictions, including an extensive discussion of various issues associated with their removal.[17] The NMAB affirmed its tentative conclusion that the purposes of the Act do not justify maintenance of off-board trading restrictions generally and indefinitely. However, the NMAB also expressed its belief that:

> * * * [R]emoval of these restrictions may have a profound effect on the manner in which listed securities are traded, and therefore * * * such restrictions should be removed only after certain additional facilities and rules are in place. There are divergent views among Board members * * * as to whether and when particular restrictions should be removed, and as to which facilities and rules must be in place prior to such removal.[18]

In particular, the NMAB Off-Board Letter identified as appropriate collateral steps:

(i) Implementation of an effective composite quotation system;

(ii) Consideration of the need to adopt rules and develop facilities to enhance limit order protection "to the maximum practical extent;"

(iii) Examination of the need to adopt rules to protect retail customers in their transactions with dealers;

(iv) Revision of Commission and self-regulatory rules to achieve "equal regulation" of exchange, specialists and off-board market makers;

(v) Review of brokers' "best execution" responsibilities; and

(vi) Reconsideration of the current practice of reporting last sale prices without giving effect to commissions, commission equivalents or differentials in the consolidated transaction reporting system ("consolidated system") contemplated by Rule 17a–15 under the Act (17 CFR § 240.17a–15).[19]

The NMAB recommended that the Commission solicit public comment on these matters in this release. Finally, the NMAB expressed its belief that, with appropriate Commission action, all prerequisites to removal of off-board trading restrictions could "be accomplished without significant delay."[20]

## II. Remaining Off-Board Trading Restrictions and Progress Toward a National Market System

### A. REMAINING OFF-BOARD TRADING RESTRICTIONS

Following adoption of Rule 19c–1 under the Act, certain exchanges made conforming revisions of their off-board trading restrictions. These rule changes were filed with the Commission pursuant to Rule 19b–4 under the Act (17 CFR § 240.19b–4) and published by the Commission for comment.[21] No exchange has

[7] Rule 19c–1 defined the term "third market maker" to mean a "market maker" as defined in Rule 15c3–1(c)(8) under the Act (17 CFR § 240.15c3–1(c)(8)) who makes markets over-the-counter in listed equity securities and who maintains the minimum net capital required of a market maker by Rule 15c3–1 under the Act (17 CFR § 240.-15c3–1).

[8] Rule 19c–1 defined the term "nonmember block positioner" to mean a "block positioner" as defined in Rule 17a–17 under the Act (17 CFR § 240.17a–17) who is not a member of the particular exchange involved. In addition, until January 2, 1977, Rule 19c–1 permitted exchange rules to require members effecting such transactions to satisfy limit orders on the specialist's book or in any other limit order mechanism of the exchange. See, with respect to the Commission's determination to restrict the application of Rule 19c–1 to listed equity securities, September Release, supra note 3, at 12–13.

[9] September Release, supra note 3, at 27, 28, 40.

[10] December Release, supra note 1, at 2.

[11] Id.

[12] Id. at 28. The December Release expressed the Commission's conclusions with respect to offboard principal restrictions in terms calculated to inform the securities industry and the public that the Commission would permit, at a minimum, exchange members to engage in over-the-counter market making in listed securities at some specific future date. See id. at 18, 25, 27, 28.

[13] Id at 40.

[14] The NMAB was established by the Commission in September, 1975, pursuant to Section 11A(d)(1) of the Act (15 U.S.C. 78k–1(d)(1)). The Act proides that the NMAB, among other things, shall furnish its views on significant regulatory proposals made by the Commission and generally shall make recommendations to the Commission as to appropriate steps to facilitate the establishment of a national market system. The NMAB is composed of fourteen members (with terms currently scheduled to expire in September, 1977), a majority of whom are associated with brokers and dealers (as prescribed by Section 11A(d)(1) of the Act), and has met monthly since its inception.

[15] Letter from the NMAB to the Chairman and the Commissioners of the Securities and Exchange Commission, dated September 24, 1976 ("NMAB Agency Letter").

[16] Letter from the NMAB to the Chairman and the Commissioners of the Securities and Exchange Commission, dated February 25, 1977, at 2–3 (footnote omitted).

[17] Letter from the NMAB to the Chairman and the Commissioners of the Securities and Exchange Commission, dated May 19, 1977 ("NMAB Off-Board Letter").

[18] Id. at 3.

[19] See id. at 5–6.

[20] Id. at 6 (footnote omitted).

[21] Amex (File No. SR–Amex–76–10), noticed in Securities Exchange Act Release No. 12200 (March 12, 1976), 41 FR 11896 (1976), approved by order of the Commission in Securities Exchange Act Release No. 12243 (March 23, 1976), 41 FR 13419 (1976); Boston Stock Exchange (File No. SR–BSE–76–4), noticed in Securities Exchange Act Release No. 12132 (February 23, 1976), 41 FR 8840 (1976), approved by order of the Commission in Securities Exchange Act Release No. 12248 (March 23, 1976), 41 FR 13420 (1976); Chicago Board Options Exchange, Inc. (File No. SR–CBOE–76–5), noticed in Securities Exchange Act Release No. 12165 (March 4, 1976), 41 FR 10498 (1976), approved by order of the Commission in Securities Exchange Act Release No. 12247 (March 23, 1976), 41 FR 13421 (1976); Midwest Stock Exchange (File No. SR–MSE–76–5), noticed in Securities Exchange Act Release No. 12209 (March 16, 1976), 41 FR 11906 (1976), approved by order of the Commission in Securities Exchange Act Release No. 12246 (March 23, 1976), 41 FR 13422 (1976); NYSE (File No. SR–NYSE–76–2), noticed in Securities Exchange Act Release No. 12042 (January 23, 1976), 41 FR 5155 (1976), approved

to date eliminated any of its off-board principal or remaining off-board agency restrictions.[32] Certain regional exchanges however, have special rules permitting members who are also third market makers to effect transactions in listed securities directly on the exchange floor without affecting the ability of these members to continue to make two-sided markets in those securities over-the-counter.[33] Finally, certain exchanges have separate off-board trading restrictions for different categories of listed securities.[34]

### B. DEVELOPMENTS FOLLOWING ADOPTION OF RULE 19C-1

As noted above, the Commission announced in the December Release that it would reconsider its 1975 decision to permit exchanges to retain off-board principal restrictions this year in the context of progress in the interim toward a national market system.[35]

While Section 11A(a)(2) of the Act (15 U.S.C. 78k-1(a)(2)) directs the Commission to facilitate the establishment of a national market system in accordance with specified Congressional findings and to carry out certain enumerated statutory objectives, the term "national market system" is not specifically defined in the Act, and the Act does not explicitly require implementation of any specific elements as part of such a system.[36] Rather, the term national market system is used as a comprehensive reference to those regulatory and technological steps which the Commission and the securities industry must take in order to integrate the mechanisms for trading qualified securities[37] and the trading behavior of investors and securities professionals in order to achieve a nationwide interactive market system.[38] In this regard a number of events affecting the development of a national market system have occurred since the December Release. These developments are discussed below.

1. *Rule 19c-1 experience.* Since March 31, 1976, the effective date of Rule 19c-1 under the Act, exchange members have been permitted to effect over-the-counter transactions as agent in listed equity securities. Until January 2, 1977, however, the Rule permitted each exchange to continue to require its members to satisfy public limit orders on that exchange at prices equal or superior to the over-the-counter transaction price as a condition to effecting any such transaction.[39] Rule 19c-1, however, appears to have had little impact on the historical patterns of market selection by exchange members acting as brokers.[40]

2. *Consolidated system.* The consolidated system, which disseminates last sale prices from all reporting markets for equity securities listed on the NYSE and for equity and certain debt securities listed on the Amex (plus certain regional listings) nationally on a current and continuous basis, became fully operational on April 30, 1976.[41] Completion of the final stage of the consolidated system made last sale information included in that system available through interrogation devices on a real-time basis regardless of transmission delays in the consolidated system low speed ticker network caused by high volume. Developments and implementation of the consolidated system, achieved through the joint action of the self-regulatory organizations, has provided a useful experience in successful collective industry action to implement national market system facilities.[42]

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by order of the Commission in Securities Exchange Act Release No. 12242 (March 23, 1976), 41 FR 13422 (1976) and (File No. SR-NYSE-76-19), noticed in Securities Exchange Act Release No. 12215) (March 16, 1976), 41 FR 12101 (1976), approved by order of the Commission in Securities Exchange Act Release No. 12244 (March 23, 1976), 41 FR 13423 (1976); Pacific Stock Exchange, Incorporated (File No. SR-PSE-76-10), noticed in Securities Exchange Act Release No. 12176 (March 18, 1976, 41 FR 10975 (1976), approved by order of the Commission in Securities Exchange Act Release No. 12245 (March 23, 1976), 41 FR 13424 (1976); Philadelphia Stock Exchange, Inc. (File No. SR-PBWSE-76-11), noticed and approved by order of the Commission in Securities Exchange Act Release No. 12281 (March 29, 1976), 41 FR 14800 (1976).

[32] See Amex Rule 5; Boston Stock Exchange Rules, Chapter II, Section 23; Chicago Board Options Exchange Rule 6.49; Cincinnati Stock Exchange By-Laws, Section 26; Midwest Stock Exchange Rules, Article XVII, Rule 9; NYSE Rule 390; Pacific Stock Exchange Rule XIII; Philadelphia Stock Exchange Rule 132.

[33] See, e.g., Boston Stock Exchange Constitution, Article XXV; Cincinnati Stock Exchange By-Laws, Section 26(g); Philadelphia Stock Exchange By-Laws, Article XXIII; Pacific Stock Exchange Rule XII, Section 7(a) and Rule XIII, Section 1(c). See also September Report, supra note ----, Appendix C, at C-20—C-29.

[34] See, e.g., Amex Rule 5 (stocks and rights) and Rule 6 (bonds); NYSE Rule 390 (stocks), Rule 395 (rights) and Rule 396 (bonds). See also September Report, supra note 3, Appendix B, at B-63—B-68; Appendix C, at C-1—C-9.

In addition, the Commission recently approved a rule proposal of the Pacific Stock Exchange (File No. SR-PSE-77-14) rescinding its off-board principal restrictions with respect to securities not listed on any exchange as to which unlisted trading privileges are extended by that exchange pursuant to Section 12(f)(1)(C) of the Act (15 U.S.C. 781(*f*)(1)(c)). See Securities Exchange Act Release Nos. 13618 (June 10, 1977), -- FR ------ (1977), and 13656 (June 22, 1977), -- FR ------ (1977), respectively. Whether rescission of those restrictions is sufficient to meet the standards of Section 12(f)(2) of the Act is among the issues to be addressed by interested persons in hearings on whether an application by that exchange for such unlisted trading privileges should be granted. See Securities Exchange Act Release No. 13658 (June 22, 1977), -- FR ------ (1977). See also Securities Exchange Act Release No. 13657 (June 22, 1977), -- FR ------ (1977).

[35] December Release, supra note 1, at 28.

[36] See S. Rep. No. 94-75, Report to Accompany S. 249, 94th Cong., 1st Sess. 8-9 (1975).

[37] Section 11A(a)(2) of the Act (15 U.S.C. 78k-1(a)(2)) provides that "[t]he Commission, by rule, shall designate the securities or classes of securities qualified for trading in the national market system from among securities other than exempted securities."

The Commission has not yet proposed or adopted a rule designating any securities or classes of securities as "qualified" within the meaning of this section, but is actively studying this area. The Commission notes, however, that listed equity securities included in the consolidated system, for the most part, seem to possess characteristics (including, in most cases, national investor interest, multiple forum trading and substantial assets and earnings histories) which many persons believe justify their inclusion in the "qualified" category. In addition, listed equity securities serve as a good study model for the Commission's ultimate determination of which securities or classes of securities should be defined as "qualified" for inclusion in the national market system.

[38] The Act contemplates a linking of securities market centers through communications and data processing facilities that foster efficiency, enhance competition, increase the availability of information, facilitate the offsetting of investor orders and contribute to the best execution of such orders. See Section 11A(a)(1)(D) of the Act (15 U.S.C. 78k-1(a)(1)(D)).

[39] See note 8 supra.

[40] Reports furnished to the Commission by the New York Stock Exchange, Inc. ("NYSE") indicate that, for the period from March 31 through December 31, 1976, NYSE members effected only 89 transactions, involving an aggregate of approximately 500,000 shares of NYSE-listed securities, over-the-counter. During the same period, reports furnished by the American Stock Exchange, Inc. ("Amex") indicate that its members effected approximately 1,600 agency transactions (including approximately 400 odd-lot executions), involving an aggregate of approximately 1,900,000 shares, over-the-counter. These reports are included in Commission File No. 4-180.

While a substantial number of the off-board transactions reported by the NYSE exceed 1,000 shares, 75 percent of the off-board transactions reported by the Amex involved 500 shares or less. Following January 2, 1977, when the limit order book clearance requirement permitted by Rule 19c-1 expired, exchanges generally ceased compiling member reports of such transactions and, accordingly, the Commission has no detailed information as to the extent of over-the-counter agency trading by exchange members after that date. While the Commission has no reason to believe that there has been any substantial increase in such trading since January 2, 1977, the Commission specifically invites exchanges and others to comment or supply any relevant data they may have in this regard to the Commission for its consideration in connection with this proceeding.

In addition, in conjunction with rule changes necessary to comply with Rule 19c-1, certain exchanges clarified the scope of their remaining off-board trading restrictions to indicate that such restrictions do not apply to transactions in listed securities, as either principal or agent, effected on any foreign exchange, or outside of exchange trading hours, over-the-counter in any foreign country. See, e.g., NYSE Rule 390, Supplemental Material, at paragraph .10. As a result of this clarification, NYSE members apparently have increased their participation in foreign trading markets for listed securities. See NYSE letter of comment on proposed Rule 17a-3(a)(9) (April 29, 1977) at 8, in Commission File Nos. S7-613 and 4-180.

[41] See Securities Exchange Act Release No. 12138 (February 25, 1976).

[42] Section 11A(a)(3) of the Act (15 U.S.C. 78k-1(a)(3)) authorizes the Commission, in furtherance of the statutory directive to facilitate the establishment of a national market system, by rule or order "to authorize or

3. *Composite quotation system.* Since 1972, the Commission has encouraged industry development of a nationwide system for comprehensive disclosure of quotations in listed securities from all markets on a current and continuing basis ("composite quotation system"). Limited prototypes of such a system are available and in some use today.[33] On June 14, 1977, the Commission published a revised form of proposed Rule 11Ac1-1 under the Act [17 CFR § 240.11Ac1-1] to require self-regulatory organizations to collect from their members bids, offers and quotation sizes with respect to all listed equity securities reported in the consolidated system ("reported securities").[34] Proposed Rule 11Ac1-1, if adopted, would require quotation information to be disseminated in accordance with the Rule by January 1, 1978. Accordingly, the Commission anticipates that various competitive composite quotation services utilizing the information required to be made available pursuant to the Rule will be offered to market professionals promptly after that date.

4. *National system for clearance and settlement.* Complementing the national market system mandate of Section 11A of the Act, Section 17A [15 U.S.C. 78q-1] directs the Commission to facilitate the establishment of a national system for the prompt and accurate clearance and settlement of securities transactions.[35] The Commission recognizes that the existence of such a system is a prerequisite to full operation of a national market system.

Since December 1, 1975, the Commission has granted limited registration to 11 clearing agencies and approved clearing agency rule submissions establishing satellite facilities and interfaces between clearing agencies and expanding the list of issuers eligible for clearance and settlement through clearing agencies. In granting registration as a clearing agency to the National Securities Clearing Corporation ("NSCC"), the Commission has imposed, as a condition to registration, NSCC's establishment of full interfaces (without interface fees) with other clearing agencies and depositories.[36] Recently, the Commission requested comment on proposed standards to be applied by the Commission in granting full registration to clearing agencies[37] and adopted rules governing the performance of transfer agent functions.[38]

The Commission believe that, as a result of actions taken to date and currently being taken, the absence in the immediate future of a nationwide clearance and settlement network is not central to our consideration of whether to take steps now to require removal of remaining off-board trading restrictions. Fulfillment of the conditions to the NSCC registration, completion of other clearing agency registrations in accordance with the Commission's proposed registration standards and the assurance of predictable and timely transfer agent performance, however, should enable a broker or dealer to clear and settle, promptly and efficiently, all its securities transactions through the clearing agency of its choice, regardless of the market in which the transaction occurs or the identity of the other party to the transaction. Accordingly, while the elements of a national system for clearance and settlement are not yet fully in place, the Commission anticipates that brokers and dealers will be able in the near future to route their orders in pursuit of the best price offered in any market for listed equity securities without incurring significantly different clearance and settlement costs.

5. *Market center competition.* Since before issuance of the December Release, market centers have engaged in increasingly intense competition for order flow, competition the Commission believes has been enhanced by removal of exchange rules fixing rates of commissions and floor brokerage effective May 1, 1975, and May 1, 1976, respectively.[39] In addition to the direct impact of that action on rates charged to customers for brokerage services (and on floor brokerage rates), removal of fixed commission rates seems to have spurred exchanges to experiment with various new kinds of automated order routing and execution services to better serve their members and attract new business.[40] These services represent a response to increasing competitive pressure on market centers to offer cheaper and more flexible facilities for executing securities transactions in the most efficient way.

In a separate development, the NYSE and the Amex rescinded their "New York City" rules (which, in substance, prohibited members of each exchange from trading listed securities of that exchange on the other exchange),[41] and today those exchanges compete directly in several dually traded issues. In addition, competition between two specialist units developed at one post on the floor of the NYSE during 1976,[42] and that exchange has indicated that it is actively engaged in considering steps to encourage additional market making competition on its floor. Finally, the NYSE is considering certain access proposals which would modify the existing "seat" concept of membership permitting electronic and physical access to the NYSE trading floor to any broker-dealer willing to pay an annual fee.[43]

6. *Industry market linkage initiatives.* In the December Release, the Commission indicated its belief that the securities industry would take prompt steps to develop any facilities considered necessary to minimize or eliminate any adverse consequences of subsequent Commission action requiring removal of off-board principal restrictions.[44] Responding to this charge, the National Market Association ("NMA")[45] has, since September 1976, sought industry support for a proposal to construct an electronic inter-market order routing facility, called the Intermarket Execution System ("IME"). The IME would permit orders

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require self-regulatory organizations to act jointly with respect to matters as to which they share authority under [the Act] in planning, developing, operating, or regulating a national market system (or a subsystem thereof) or one or more facilities thereof . . . ."

[33] The National Association of Securities Dealers, Inc. ("NASD"), commencing in January, 1977, has offered a composite quotation service for multiply traded NYSE-listed securities as an adjunct to its NASDAQ quotation collection and dissemination service for over-the-counter securities. The NASD composite quotation service provides a montage of bid and offer prices (without size) from most exchanges and some third market makers. Institutional Networks Corporation, in conjunction with its "Instinet" block trading system, provides a montage of bid and offer prices from exchange markets. GTE Information Systems, Inc. provides composite quotation information of a more limted nature (e.g., the best bid price and best offer price from any market included in its system).

[34] Securities Exchange Act Release No. 13626 (June 14, 1977), ---- FR ---- (1977). See also Securities Exchange Act Release No. 12670 (July 29, 1976), 41 FR 32856 (1976).

[35] See Section 17A(a)(2) of the Act (15 U.S.C. 78q-1(a)(2)).

[36] See Securities Exchange Act Release No. 13163 (January 13, 1977), 42 FR 3916 (1977). NSCC is the successor to the Amex, NASD and NYSE clearing corporations.

[37] Securities Exchange Act Release No. 13584 (June 1, 1977), 42 FR 30065 (1977).

[38] Securities Exchange Act Release No. 13636 (June 16, 1977), ---- FR ---- (1977).

[39] See Section 6(e) of the Act (15 U.S.C. 78f(e)). See also Rule 19b-3 under the Act (17 CFR § 240.19b-3), adopted in Securities Exchange Act Release No. 11203 (January 23, 1975), 40 FR 7394 (1975), and the five Commission reports to the Congress, pursuant to Section 6(e)(3) of the Act, concerning the effect of the absence of fixed rates of commissions, cited infra.

[40] E.g., automated order routing systems are operating on the Amex ("PER") and NYSE ("DOT"); such systems are also operating on the Pacific ("COMEX") and Philadelphia ("CENTRAMART") Stock Exchanges. The Midwest Stock Exchange operates a proprietary order routing system ("Signet 80"), which interfaces both with its floor and the NYSE. COMEX and CENTRAMART also provide execution of orders introduced to those systems in accordance with a specified formula. The Midwest Stock Exchange also makes available a formula pricing mechanism ("MAX"). For other developments, see market linkage discussion infra.

[41] See Securities Exchange Release Nos. 12717 (SR-AMEX-76-17, August 19, 1976), 41 FR 36094 (1976), and 12859 (SR-NYSE-76-47, October 4, 1976), 41 FR 47121 (1976).

[42] Certain allegations, however, that this development occurred for reasons which are anti-competitive are presently before the Commission. See In the Matter of Kingsley, Boye & Southwood, Inc., Commission File No. 3-5146.

[43] See Report by the NYSE Committee on Access, Achieving Greater Access to the New York Stock Exchange (December 1976).

[44] See December Release, supra note 1, at 28.

[45] The NMA is an informal industry group, comprised of representatives of the principal exchanges and the NASD, brought together under the sponsorship of the Securities Industry Association.

to be routed directly from one market to another.[46] The Commission understands that the proposed IME is intended to enhance competition among market centers for reported securities and provide a means for increased protection of limit orders. While discussion continues, the NMA has been unable thus far to secure agreement among self-regulatory organizations with respect to trading rules to be applicable to the IME system. Unless such agreement is forthcoming, it would appear unlikely that any such system will be implemented on a voluntary basis without Commission intervention. In addition to the NMA's deliberations, certain regional exchanges are discussing possible applications of the technology developed for the Weeden Holding Automatic Market ("WHAM")[47] to a linkage of at least those exchanges into an integrated electronic trading system.

The Commission has considered whether the developments described above (and related charges in the markets) have reduced the burdens on competition represented by off-board principal and remaining off-board agency restrictions, or in any way have demonstrated that the purposes of the Act would be furthered by permitting such restrictions to remain in effect for a transitional period pending full implementation of a national market system. In particular, the Commission has considered whether securities industry efforts to develop new facilities for trading listed securities in a manner calculated to speed progress toward a national market system have proceeded in such a way as to warrant further delay in removing remaining off-board trading restrictions.

Although the developments discussed above indicate that some progress toward the realization of a national market system has occurred since adoption of Rule 19c-1 under the Act in December 1975, it appears that, with the exception of the substantial achievements in the area of clearance and settlement, efforts by the private sector to achieve the type of linking of markets, integration of order flow and enhanced competition envisioned by the Congress when it enacted the 1975 Amendments have not yet succeeded to the extent anticipated by Congress.[48] Certainly, the steps taken thus far by the securities industry have not demonstrated that elimination of remaining off-board trading restrictions should be further deferred in the hope that, under current circumstances, self-regulatory organizations and market professionals will, without further economic or regulatory compulsion, subordinate what they believe to be their separate and private interests and work collectively, utilizing and building upon the systems initiatives discussed above, to achieve the kind of market linkage contemplated by Section 11A of the Act. However, the Commission continues to believe that future development of such linkage would substantially eliminate any remaining concern that removal of those restrictions might have adverse consequences.[49]

Elimination of burdens on competition, particularly those which impede progress toward the implementation of a national market system, is an essential task of the self-regulatory organizations and the Commission.[50] Accordingly, while questions continue to be raised concerning certain possible adverse consequences of eliminating remainnig off-board trading restrictions,[51] the Commission believes that, because those restrictions represent burdens on competition which do not appear necessary or appropriate in furtherance of the purposes of the Act, it must now establish a firm date for elimination of those restrictions.

Persons believing that progress since adoption of Rule 19c-1 toward greater competition in the securities industry or toward a national market system demonstrates either that off-board trading restrictions no longer represent burdens on competition or that such restrictions should be retained to further the purposes of the Act, including the development of a national market system, should present views, data and arguments for the Commission's consideration.

### III. Commission Determination to Commence a Proceeding

The Commission continues to believe that exchange off-board trading restrictions impose burdens on competition. Off-board principal restrictions impose significant burdens on competition by effectively preventing exchange members other than specialists from competing with specialists and over-the-counter market makers in the business of making two-sided, round-lot markets in exchange-listed securities.[52] Consequently, as presently in effect, off-board principal restrictions deprive the securities markets of the benefits which might otherwise accrue from enhancement of competition among market makers and the commitment of additional capital and professional skill to the market making function.[53]

Off-board principal restrictions also impose burdens on competition by preventing exchange members from executing their customers' orders in-house as principal, by simply filling customers' orders from investory accumulated as a result of market making or otherwise.[54] In addition, these restrictions also preclude members from executing orders periodically for their own accounts off-board with third market-makers, with institutions or with other members, either for investment purposes or in connection with positioning a portion of a larger block transaction.[55]

Remaining off-board agency restrictions impose burdens on competition by precluding persons other than third market makers or non-member block positioners—such as third market brokers—from competing for order flow in listed equity securities.[56] In addition, the existing prohibition on "in-house" agency crosses prevents certain firms, and their customers, from realizing benefits from possible efficiencies in order execution and from the development for new trading strategies advantageous to customers.[57]

The determination that exchange off-board trading restrictions constitute burdens on competition creates a presumption under the Act favoring their

[46] See NMA, Intermarket Execution System Discussion Paper (April, 1977).

[47] WHAM is an electronic trading system in use on the Cincinnati Stock Exchange with respect to a limited number of utility securities. The WHAM facility has many of the characteristics of a composite limit order book. See December Release, supra note 1, at 47 et seq., and Securities Exchange Act Release No. 12159 (March 2, 1976). Institutional Networks Corporation also has developed a prototype system, designated "Unimart," contemplating automated intermarket trading.

[48] See Sections 11A(a)(1)(C) and (D) of the Act (15 U.S.C. 78k-1(a)(1)(C), 78k-1(a)(1)(D)).

[49] See December Release, supra note 1, at 27. See also discussion infra.

[50] Sections 6(b)(8) and 15A(b)(9) of the Act (15 U.S.C. 78f(b)(8), 78o-3(b)(9)) provide that no exchange or association of brokers and dealers (as the case may be) may be registered with the Commission as a national securities exchange or national securities association unless the Commission determines that the rules of the exchange or assocation (as the case may be) "do not impose any burden on competition not necessary or appropriate in furtherance of the purposes of [the Act]." In addition, among the Congressional findings underlying the Act's directive to the Commission to facilitate the establishment of a national market system, is that [i]t is in the public interest and appropriate for the protection of investors and the maintenance of fair and orderly markets to assure— * * * (ii) fair competition among brokers and dealers, among exchange markets and between exchange markets and markets and other than exchange markets; * * *

Section 11A(a)(1)(C)(ii) of the Act (15 U.S.C. 78k-1(a)(1)(C)(ii)). See also Section 11A(c)(4) of the Act (15 U.S.C. 78k-1(c)4)).

With respect to the ways in which competition is impeded by exchange off-board trading rules, the Commission's determination that such rules impose burdens on competition, and objectives of the Act, see December Release, supra note 1, at 5-12, 17, 29-30; September Release, supra note 3, at 3, 14-32. See also discussion infra.

[51] See discussion infra.

[52] See December Release, supra note 1, at 17; September Release, supra note 3, at 21.

[53] See December Release, supra note 1 at 17.

[54] See id.

[55] See id.

[56] See discussion infra.

[57] See December Release, supra note 1, at 7, 38-39; discussion infra. With respect to remaining off-board agency restrictions, the Commission tentatively found in the December Release that the "in-house" cross prohibitions imposed by remaining off-board agency restrictions may not be significantly anticompetitive. Upon further review, however, the Commission is inclined to conclude that the burdens on competition imposed by those prohibitions are sufficient, in view of the purposes of the Act, to require removal, at least with respect to reported securities.

removal.[58] As indicated above,[59] the Act, as amended by the 1975 Amendments, contains explicit prohibitions against adoption of any Commission rule or retention or approval of any rule of a self-regulatory organization which imposes a burden on competition "not necessary or appropriate in furtherance of the purposes of [the Act]."[60] In addition, as indicated above, the 1975 Amendments directed the Commission to focus specifically on the possible effects on competition of exchange off-board trading rules and to commence a proceeding in accordance with the provisions of Section 19(c) of the Act to "amend any such rule imposing a burden on competition which does not appear to the Commission to be necessary or appropriate in furtherance of the purposes of [the Act]."[61] Accordingly, in light of the Commission's prior determination and continuing belief that remaining exchange off-board trading restrictions impose burdens on competition, the Act requires that, absent an affirmative demonstration that retention of such restrictions is necessary or appropriate to further the purposes of the Asct, (i) off-board principal restrictions and remaining off-board agency restrictions on "in-house" agency cross transactions applicable to reported securities,[62] and (ii) all other remaining off-board agency restrictions applicable to listed equity securities, must be eliminated.[63]

Accordingly, the Commission is publishing for comment, in connection with the proceeding, proposed amendments to Rule 19c-1 and proposed Rule 19c-2, to be adopted pursuant to Section 19(c) of the Act, which would eliminate all off-board principal restrictions and remaining off-board agency restrictions with respect to reported securities and would eliminate those remaining off-board agency restrictions applicable to transactions other than "in-house" cross transactions for all listed equity securities.[64]

Persons commenting on the proposed amendments to Rule 19c-1 and proposed Rule 19c-2 should note that, in light of the burdens on competition apparently represented remaining off-board trading restrictions, the burden is on those who would retain such restrictions to demonstrate that such restrictions are "necessary or appropriate in furtherance of the purposes of [the Act]." Persons attempting to so demonstrate should indicate with particularity the ways in which the purposes of the Act are furthered by off-board trading restrictions and the relative merits of off-board trading restrictions as a means of fulfilling those purposes, in light of any burdens on competition which such restrictions represent, compared to other available alternatives (including those discussed below in connection with concerns over fragmentation and overreaching).

As discussed in the December Release, questions continue to be raised concerning the need for and the practicability of implementing measures which, after off-board trading restrictions are removed, would (i) preclude or minimize the possibility that member firms may take advantage of their customers when they effect transactions in listed securities with them as principal ("overreaching") and (ii) minimize any adverse consequences which might occur as a result of such dispersion of order flow away from existing market centers as may reasonably be expected ("fragmentation"). The Commission, however, is of the view that any adverse impact on the markets or on investors resulting from any increase in fragmentation or any new temptation to engage in overreaching can be minimized or eliminated either through the operation of competitive forces or additional Commission regulatory action (or a combination of both), and that these concerns do not necessarily preclude prompt removal of off-board trading restrictions to the extent contemplated by the Commission's proposed amendments to Rule 19c-1 and proposed Rule 19c-2.

Nevertheless, the Commission is particularly interested in receiving comment on (i) the expected consequences of any such additional fragmentation as may reasonably be expected to occur as a result of removing off-board trading restrictions, and the ways in which those consequences should be addressed, assuming they can be demonstrated to be adverse;[65] and (ii) feasible steps commentators believe should be taken to assure that, following the elimination of off-board trading restrictions, there will exist a trading environment, subject to adequate surveillance and governed by appropriately equal regulation, affording a fair field of competition among market centers, market makers and customers.[66] Finally, with respect to overreaching, the Commission is proposing for comment four alternative versions of Commission rules imposing express obligations on dealers who effect over-the-counter principal transactions in reported securities with certain categories of persons.[67]

### A. FRAGMENTATION

In the December Release, the Commission indicated that it intended to devote further study to whether removal of off-board principal restrictions would contribute substantially to fragmentation of the markets, and, if so, whether Commission action to require development of a composite limit order book ("composite book") or some other Commission regulatory initiative would be appropriate to ameliorate the effects of such increased fragmentation.[68] Potential fragmentation resulting from removal of off-board principal restrictions was discussed in the December Release in several contexts in light of the likelihood that increased over-the-counter market making would divert order flow in listed securities from existing market centers (including, particularly, the primary exchanges). The Commission gave particular attention to (i) the possibility that such a diversion of order flow, combined with an increase in the number of over-the-counter market makers in listed securities, would impair pricing efficiency, and (ii) the possibility that the quality of brokerage services generally, in terms of brokers' ability to seek out and achieve "best execution" of customer orders, would be adversley affected by the proliferation of market centers to which orders might be directed.[69]

In addition, while the December Release focused on the problem of diminishing the opportunity for public orders to be executed without the participation of a dealer[70] (and the correlative problem of

[58] See, e.g., Sections 6(b), 11A(a) and 11A(c) of the Act (15 U.S.C. 78f(b), 78k-1A(a) and 78k-1A(c)). Having determined that off-board trading restrictions do represent a significant burden on competition, the legal question posed by Section 11A(c)(4)(A) of the Act is whether, nevertheless, those restrictions "appear to the Commission to be necessary or appropriate in furtherance of the purposes of" the Act. The December Release specifies numerous possible consequences of removing off-board principal restrictions which might adversely affect the fairness and orderliness of the markets for listed securities (e.g., fragmentation, increased potential for overreaching, etc.). The Commission's task is to balance the benefits which may be expected to accrue from removal of remaining off-board trading restrictions against any possible risks of adverse consequences flowing from that action in the context of the Act's standards and purposes. See Section 23(a)(2) of the Act (15 U.S.C. 78w(a)(2)) and S. Rep. No. 94-75, Report to Accompany S. 249, 94th Cong., 1st Sess. 12-14 (1975). See also discussion of the Act's regulatory objectives in the context of off-board trading restrictions in the December Release, supra note 1, at 7-13.

[59] See note 58 supra.

[60] See Sections 6(b)(8), 15A(b)(9) and 23(a)(2) of the Act (15 U.S.C. 78f(b)(8), 78o-3(b)(9), 78w).

[61] Section 11A(c)(4)(A) of the Act (15 U.S.C. 78k-1(c)(4)(A)).

[62] See definition of "reported securities" supra at 25; note 156 infra. See also discussion infra as to the Commission's reasons for its current belief that it may be appropriate to confine removal of off-board principal and remaining off-board agency restrictions applicable to "in-house" cross transactions to reported securities.

[63] Rule 19c-1 under the Act, which removed certain off-board trading restrictions applicable to agency transactions, only requires exchanges to permit members to effect agency transactions in listed equity securities off-board with third market makers and non-member block positioners.

[64] See the proposed amendments to Rule 19c-1 and proposed Rule 19c-2 infra. Remaining off-board agency restrictions which preclude members from effecting "in-house" agency crosses in reported securities and all off-board principal restrictions applicable to such securities would be eliminated as of January 1, 1978, if proposed Rule 19c-2 is adopted; all other remaining off-board agency restrictions applicable to listed equity securities would be eliminated immediately upon the effectiveness of the proposed amendments to Rule 19c-1.

[65] See discussion of fragmentation infra.

[66] See discussion of equal regulation and surveillance infra.

[67] For the reasons discussed infra at 131-132, the Commission's proposed alternative forms of overreaching rules would apply only to reported securities.

[68] December Release, supra note 1, at 27-28.

[69] See December Release, supra note 1, at 19, 20, 24.

[70] See Section 11A(a)(1)(C)(v) of the Act.

limit order protection) primarily in the context of liberalizing off-board agency restrictions,[71] similar concerns were expressed in the Commission's analysis of off-board principal restrictions.[72]

The Commission has devoted further study to the question of fragmentation in light of the continuing evolution of the trading markets (and the particular developments discussed above) and the views of interested commentators—including those of the NMAB—concerning a composite quotation system, a composite book, and related matters.[73]

While the possibility of further fragmentation of the markets remains a matter of concern, it has not been demonstrated to the Commission's satisfaction that a significant increase in fragmentation is an unavoidable by-product of Commission action to free the trading markets of the burdens on competition represented by off-board principal restrictions. In addition, if a significant increase in fragmentation is indeed more than a mere theoretical possibility, the Commission does not yet perceive why, as discussed below, the adverse effects of any such increase would not be prevented or ameliorated as a natural consequence of competitive forces in the market place. Finally, if competitive forces alone (considered in light of evolving information and order routing systems) are insufficient to combat those effects, regulatory initiatives, such as rules imposing new duties on brokers and dealers[74] or compelling development of a composite book, would presumably be adequate to address that problem. Moreover, the purposes of the Act to be fulfilled by eliminating off-board principal restrictions and the benefits which would be conferred on the markets by encouraging additional market making competition appear sufficiently clear to outweigh such adverse effects of increased fragmentation as may reasonably be expected to occur.

Concerns over increased market fragmentation, in the Commission's view, continue to fall generally into two broad categories—the adverse impact of such a development on market efficiency and on the "fairness" of our existing market mechanisms. These concerns seem to proceed from the assumption that, since removal of off-board principal restrictions will increase opportunities for upstairs market making by member firms, these opportunities will be seized by at least some of them (particularly well-capitalized integrated firms), and a significant portion of the order flow presently directed to exchange markets, especially the primary markets will be withheld from those markets and internalized by firms electing to trade against that order flow as dealers.[75]

With respect to both market efficiency and "fairness," it is argued by some that the dispersion of order flow resulting from removal of off-board principal restrictions will adversely affect the manner in which orders are excuted and the pricing mechanism afforded by the markets in their present form.[76] First, because of an anticipated proliferation of market centers in which transactions could be effected, it is suggested that brokers seeking to execute customer orders will find it more difficult to discover and obtain the most favorable price for their customers. A consequence of that greater difficulty, some believe, will be to force brokers either to incur, and pass on to customers, increased costs in the conduct of their execution activities (generated, for example, by the need to utilize new and complex communication facilities to monitor and attain rapid access to the various new market centers), or to ignore certain types of market centers. As a result, it is argued, either brokerage costs for execution of small retail orders will rise or certain kinds of orders, particularly orders of retail customers, may not be executed at the most favorable prices obtainable (and, indeed, may be executed at less favorable prices than is the case today).

In addition, it is argued that prices for listed securities will be less likely to reflect a prompt and complete assessment of current value by all buying and selling interest if order flow in those securities is further dispersed and, therefore, that such prices would be determined in a less efficient manner than is now the case. A related concern is that the existing price leadership role performed by the primary exchange markets would be lost or diminished, resulting in wider price variations in securities transactions (particularly as to transactions occurring in the smaller regional exchange markets) and in wider "spreads" between bid and asked prices generally.

Finally, there is concern that removal of off-board principal restrictions and the resulting dispersion of order flow would eliminate market efficiencies which result today from the interaction of orders collected principally on the floor of the primary exchange markets and executed in accordance with priorities based for the most part upon time and price. A parallel concern is based on the premise that, upon removal of those restrictions, brokers and dealers (regardless of size) will lose their present ability to participate in national order flow in multiply traded listed sceurities by outbidding or outoffering other buying or selling interests represented in the single forum to which the overwhelming majority of that order flow is now directed. These auction-type features of today's exchange markets are considered by many to be essential elements of an efficient market mechanism.

Increased dispersion of order flow in listed securities, it is argued, could also diminish the likelihood (or the perception of investors) that the trading markets function in a "fair" manner, particularly with respect to the participation of nonprofessional users of those markets (i.e., persons other than brokers, dealers and institutional investors). In this regard, there is concern that, if exchange members are permitted to make markets and otherwise to effect principal transactions in listed securities over-the-counter, public orders are less likely to meet without the intervention of a dealer and that buying and selling interest expressed as limit orders held by specialists (for the most part, primary exchange specialists) will be by-passed more frequently.[77] Under such circumstances, it is argued, unless additional means are developed for ensuring the interaction of limit orders with orders executed in-house by upstairs market makers, limit order protection (a desirable objective achieved today only because most limit orders are either held for execution in the primary exchange markets or, if held elsewhere, are granted "primary market protection") would be diminished.[78] Finally, as indicated above,[79] it is argued by some that smaller brokers and dealers would be less able to compete on an equal basis with larger firms for executions (through the bidding and offering process), and, thus, that they and their customers would be unfairly disadvantaged.[80]

In considering these concerns, it should be noted that the elimination of off-board principal restrictions may not result in the degree of additional fragmentation or dispersion of order flow feared by some commentators. The elimination of such restrictions will certainly provide new market making opportunities for primary and regional exchange member firms,[81] and the Commission has no basis upon which to conclude, at this point, that firms will not avail themselves of those opportunities—at least to some degree. However, the extent to which upstairs market making or "internalization" of order flow will occur is not at all clear. Market making, whether over-the-counter or on exchanges, requires capital and expertise and involves additional costs and considerable risk. In addition, the Commission would anticipate that exchange markets (and members on exchange floors) will attempt to develop new services and more efficient methods of operation in order to retain their present levels of order flow, making entry by members into market making less attractive than is now the case.

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[71] December Release, supra note 1, at 34, 43-44, 46.

[72] Id. at 25, 27.

[73] See discussion supra; see also letter from the NMAB to the Chairman and the Commissioners of the Securities and Exchange Commission, dated January 28, 1977 ("NMAB CLOB Letter"); comments contained in Commission File No. S7-619. Requests for comment regarding the development and implementation of a composite book were made in the December Release, supra note 1, at 52, and in Securities Exchange Act Release No. 12159 (March 2, 1976).

[74] See discussion infra.

[75] See NMAB Off-Board Letter, supra note 17, at 4, 7.

[76] See id. at 4.

[77] See id., at 4, 7.

[78] See id., at 9.

[79] See text supra, at 51.

[80] NMAB Off-Board Letter, supra note 17, at 11.

[81] See December Release, supra note 1, at 27; see also September Report, supra note 2, at 16-20 and Appendix C thereto.

Firms will have to determine for each listed security, based on their own particular client mix and cost structure, whether the profit potential and risks associated with upstairs market making in that security are such they they are willing to discontinue routing of orders to exchange markets for execution as agent (except where the customer so directs) and, instead, execute those orders as principal in a market making capacity. The factors discussed above may limit the speed with which additional upstairs market making will develop, and dictate that, at least initially, firms will continue to route most orders in many listed securities to the various exchange markets for execution as they have in the past.[52] The Commission does not, however, believe that the question of how rapidly or the extent to which upstairs market making will develop should be critical to our decision with respect to off-board principal restrictions.

In addition, the possibility of wider dispersion of order flow, in and of itself, would not appear sufficient to justify the retention of off-board principal restrictions or to demonstrate that market efficiency will be impaired. For example, with respect to diversion of order flow from the primary exchanges, the Commission has previously noted that preservation of any market's present share of national order flow is not, in and of itself, an appropriate regulatory concern (such that it would outweigh the anti-competitive effects of off-board principal restrictions),[53] and that loss of order flow by the primary exchanges could occur under existing circumstances regardless of whether off-board principal restrictions are retained.[54] Similarly, the Commission has indicated its belief that, even if off-board principal restrictions are removed, pricing efficiency would be preserved by real-time disclosure of last sale information in the consolidated system, particularly when coupled with disclosure of quotations from all markets in a composite quotation system.[55] The Commission has also recognized that a composite quotation system should ensure that brokers are apprised, on a current and continuing basis, of those markets offering the most favorable execution opportunities (at least for orders of modest size) so that they have the opportunity to direct customer orders appropriately, in accordance with their professional obligations and responsibilities.[56]

With respect to the importance of small order interaction based on time and price priorities and the displacement principle (whereby brokers and dealers can intercept order flow by bettering existing bid and offer prices), it is difficult to consider these features as predominant characteristics of the markets considered as a whole today. First, various exchanges afford execution precedence based on size rather than time (according priority to the largest bid or offer at a given price), and provide that such time priorities as may be established between and among orders are eliminated in any event after each transaction (placing all orders outstanding after completion of a transaction on an equal time basis regardless of the time of entry).[57] In addition, each exchange market operates independently without regard to time or price priorities in other markets. Finally, brokers and dealers which are members of more than one exchange may avoid displacement today, as a practical matter, by diverting transactions to less active regional market centers whenever it is in their interest or their customers' interest to do so.[58]

If member firms acting as dealers are permitted to "internalize" their order flow in reported securities (i.e., to execute their customer's orders in those securities as principal over-the-counter), such dealers would be able to insulate those orders from direct exposure to the buying and selling interest of other market participants (since such participants would lose the ability to intercept and achieve executions against such order flow by outbidding or outoffering prices offered by such dealers).[59] While such a result might be regarded as "unfair," for the reasons discussed above, it does not necessarily follow as some might suggest, that internalization of order flow in reported securities would adversely affect pricing efficiency, since disclosure of last sale prices and quotations should discipline, to a significant degree, the prices charged by dealers in effecting transactions against their internalized order flow. Moreover, it may well be that competition among markets and among dealers for order flow will be sufficiently intense to ensure that the incidence of order interaction is maintained at an appropriate level even though such interaction might occur in different ways (e.g., as a result of an increase in inter-dealer trades) and for different reasons (e.g., to "lay off" unwanted long and short positions) than is now the case.[60] In particular, such enhanced competition under condition permitting relatively easy entry into market making may not only preserve existing levels of pricing efficiency, but elevate them, exerting greater discipline on price levels (in view of real-time national disclosure of quotations and completed transaction prices) than is possible in an environment where such competition is impeded by, among other things, off-board principal restrictions.

If order interaction based on price and time priority deteriorates in a significant way after removal of off-board principal restrictions, or if efficient pricing of such orders is not otherwise maintained, the Commission may have to take special action to counteract those developments (e.g., by requiring development of a composite book). Such a decision, however, must take into account arguments to the effect that, whatever benefits may be perceived as flowing from the queuing of orders based on auction principles (i.e., time and price priority), nonprofessional use of and access to present exchange systems which maintain such queues,

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[52] In this regard, it should be noted that members are now free to take agency orders either to another exchange or to a third market maker without restriction and to execute transactions as principal on any other exchange. In spite of the latitude permitted members of the NYSE in executing orders in other markets, the NYSE nevertheless has continued to attract the vast majority of order flow to its floor and may well continue to do so after off-board principal restrictions are removed. See note 30 supra.

[53] December Release, supra note 1, at 35.

[54] Id. at 20.

[55] Id. at 18–19, 37. In this regard, the NMAB has concluded that "rules and facilities comprising an effective composite quotation system should be in place prior to the removal of off-board trading restrictions." NMAB Off-Board Letter, supra note 17, at 4.

As indicated supra, the Commission has recently republished for comment proposed Rule 11Ac1–1 under the Act, governing the dissemination of quotations in listed securities from exchanges and third market makers. See Securities Exchange Act Release No. 13626 (June 14, 1977), -- FR ------ (1977). That rule, if adopted, would improve quotation information to a significant degree, and thereby facilitate the development of an effective composite quotation system and the advent of a national market system. The Commission, however, solicits the views of interested persons as to the importance of a composite quotation system to the maintenance of pricing efficiency in reported securities (in view of the existence of the consolidated system) and as to whether such persons view the absence of the type of real-time quotation information contemplated by Rule 11Ac1–1 as justifying any delay in the removal of off-board principal restrictions with respect to such securities. See discussion infra.

[56] December Release, supra note 1, at 24, 27, 45.

[57] See, e.g., NYSE Rule 721(c), (e).

[58] A buyer or seller does have the opportunity today to displace an order brought to any exchange market by stationing an agent at the trading post for the security on each exchange trading the security to be bought or sold. However, few brokers or dealers are apparently staffed sufficiently to permit such an effort, and few (if any) circumstances would justify the expense of doing so in any event.

[59] Commission or self-regulatory organization rules and new trading facilities which would preserve this ability may prove to be necessary. See discussion infra.

[60] Competition among dealers and markets today seems to be most intense only when it is possible for dealers to attract more orders (i.e., to influence brokers' decisions in selecting among markets and, thus, decisions as to where they send their order flow) by offering better prices or demonstrating greater depth and liquidity, or offering lower execution costs. Under current circumstances, however, market professionals apparently believe that once brokers have selected a market for execution of orders (particularly small orders) that decision will not be changed merely because, at some subsequent time, another market occasionally offers more favorable prices. Competition for order flow among the regional exchanges, the third market and the NYSE seems to demonstrate that price competition, under the current market environment, has had only a limited influence on broker behavior; commentators with contrary views should present the bases for those views in the course of this proceeding.

and, very possibly, more elaborate electronic queuing systems which may be needed to perfect such queuing, may involve such heightened transaction costs, compared to the transaction costs inherent in a competitive dealer system not burdened by the expenses associated with maintenance of an auction queue, that the economic value of those apparent benefits is immaterial or nonexistent.

Quite independent of the need for the Commission to take special steps to preserve auction principles and efficient pricing, the Commission expects that, since efficient pricing of small orders and fair treatment of customers is important to serving customers of market professionels, the securities industry itself, acting alone or in concert with the various self-regulatory organizations, will be able and will have the incentive to develop appropriate means of preserving or enhancing those principles and ensure continued efficient pricing of orders after off-board principal restrictions are removed (if such action is necessary).[81] Certain market linkage proposals, such as the NMA's IME order routing mechanism, and prototype electronic trading systems, such as WHAM and Unimart, represent at least initial steps toward industry development of one or more systems to capture and achieve interaction among both professional and non-professional orders in listed securities on a national basis (with varying degrees of importance being accorded notions of time and price priority). If these initiatives are perceived generally by brokers, dealers and investors as valuable contributions to the trading markets of the future (as the Commission would anticipate), the Commission would expect that they will be improved and used on an increasingly frequently basis by those in the business of attracting order flow as dealers or of serving others as brokers, as a general business matter as well as in response to perceptions of professional responsibility.

Similar considerations, in the Commission's view, apply to concerns about the protection of public limit orders. The Commission has previously stated that:

> [P]ublic limit orders and the intended function of the specialist's limit order book have important roles in our securities markets, and that displacement of proposed transactions between securities customers (or their brokers) and market makers by such orders, under certain circumstances, is appropriate in the public interest and for the protection of investors to ensure the fairness of the markets and an opportunity for public orders to meet without the participation of a dealer.[82]

In addition, many commentators have deemed protection of limit orders an important objective. In this regard, the NMAB commented that

> [L]imit orders, which constitute a significant portion of the orders placed with respect to listed securities, not only serve a useful purpose for investors but also contribute to the strength and orderliness of the market. They provide depth and liquidity (i) by facilitating stabilizing trades (sales in rising markets and purchases in falling markets) at prices reasonably related to preceding trades, (ii) by facilitating the assembly of the opposite side of "block transactions," and (iii) by narrowing the spread between the bid and asked * * *. Providing * * * protection of limit orders would also help to reduce market "fragmentation" * * * and could serve to enhance competition by affording wider access to information about limit orders and a greater opportunity for specialists and market makers to compete in providing the other side of limit orders.[83]

Notwithstanding the desirability of limit order protection, the Commission does not currently view any diminution in such protection which is likely to occur from elimination of off-board principal restrictions as a reason either to retain such restrictions or defer their removal, and believes that the Act requires those who would urge their retention (and the burdens on competition they represent) to demonstrate why, under existing circumstances, such additional loss of limit order protection would justify that action.[84] First, although existing exchange mechanisms for the storage and execution of limit orders provide a substantial degree of protection for such orders, those mechanisms (and exchange rules which require use of those mechanisms by restricting off-board trading activity) are unable to provide full protection for such orders.[85]

More importantly, however, the Commission is not yet convinced that, in an environment without restrictions on off-board trading, brokers, dealers and self-regulatory organizations will fail to take steps to afford protection for limit orders equal or superior to that available today. In such an environment, market centers may develop new means of financing (or, simply, may be more willing to grant) guarantees of limit orders against executions in other market centers.[86] Retail firms which determine to begin market making and attempt to "internalize" their order flow may choose, or find it necessary as a competitive or public relations matter, for instance, to provide some degree of primary market or consolidated system protection for their limit order customers (particularly small retail customers) against transactions at interior prices.[87] Such a development, in turn, could encourage primary market specialists to provide similar protection to orders which they hold.

Finally, certain of the initiatives described above, aimed at improving order interaction among market centers, offer the prospect of enhanced limit order protection. For example, the NMA's proposed IME system, as the Commission understands its proposed characteristics, would ensure that public limit orders in all markets are executed in the event transactions of block size take place at prices outside certain parameters, regardless of where those blocks are traded.[88] In addition, the WHAM electronic trading system, currently operating on a pilot basis through the facilities of the Cincinnati Stock Exchange, includes storage, display and automatic execution capability for limit orders.[89]

Those who believe that limit order protection necessarily will diminish if off-board principal restrictions are removed should be prepared to demonstrate the bases for that belief in this proceeding. Although the Commission is not inclined at this time to view concerns regarding order interaction based on time or price priority or the need for limit order protection as a basis for either refraining from removal of off-board principal restrictions or delaying their removal, the Commission wishes to reemphasize that it is prepared to take action in these areas if the need for such action becomes apparent. In particular,

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[81] To date, however, efforts by the NMA or by the regional exchanges acting in concert to develop new systems capable of improving order interaction among market centers have not proven completely successful, and the NMAB has suggested that direct Commission action may be needed. NMAB CLOB Letter, supra note 73, at 5–6.

[82] December Release, supra note 1, at 49.

[83] NMAB CLOB Letter, supra note 73, at 7–8.

[84] See discussion of the objectives of the Act and of the Commission's responsibilities in connection with removal of off-board trading restrictions in December Release, supra note 1, at 5–13, 27–28, 46.

The Commission notes that a substantial number of members of the NMAB believes that:

> rules and facilities protecting limit orders to the maximum extent practical in a fair and equitable manner should be in place prior to the removal of off-board trading restrictions [and that] * * * the Commission should take affirmative action to ensure that such rules and facilities are in place prior to removal.

NMAB Off-Board Letter, supra note 17, at 4. On the other hand, some members of the NMAB appear to be opposed to a Commission mandated limit order protection system (and doubt whether any such system is needed). Id. at 9. The Commission has considered the viewpoints of the NMAB members in arriving at its present view of the need for limit order protection and has concluded that consideration of this issue, and the need for Commission regulatory action, should proceed promptly—concurrently with, but independent of, any action to amend or abrogate existing off-board trading restrictions.

[85] For example, as noted supra at 58, limit orders may be avoided, in whole or in part, as a practical matter, by number of techniques, including the execution of a transaction on a regional exchange or as agent with a third market maker or non-member block positioner. In addition, dual members are not required to satisfy orders on the books of all the exchanges of which they are members before they execute a trade on any particular exchange, and existing technology would make such a requirement, if imposed, wholly impracticable. Finally, existing exchange rules regarding priority and precedence and renewal of the "auction" after each transaction have not, in the Commission's view, provided an ideal framework for the protection of public orders (especially those of small size). See December Release, supra note 1, at 49.

[86] See NMAB Off-Board Letter, supra note 17, at 9–10.

[87] See id.

[88] See NMA, Intermarket Execution System Discussion Paper (April, 1977).

[89] The system also provides that limit orders entered by persons other than dealers receive execution priority over dealer bids and offers at the same price. See discussion supra.

if the Commission should determine that both order interaction of the type occurring today (in an environment requiring the physical presence of brokers and market makers in the same location) and nationwide limit order protection should be fostered, and that private initiatives are not adequate to ensure such interaction or protection, the Commission will consider further affirmative steps to compel development of a composite book (or a similar system),[100] or other types of regulatory action designed to achieve those goals.

For example, should exchanges (or brokers and dealers) determine to publicize the contents of their individual order books electronically, and to afford some ready means of reaching the orders entered in those books, the Commission might determine to require brokers and dealers to give recognition to such published limit orders in dealing with others as agent or as principal. Other possible approaches include (but are not limited to): (i) requiring brokers to direct customers' orders on the basis of quotations displayed electronically in a composite quotation system (if those quotations are firm in size equal to or greater than the order size); (ii) permitting limit orders not entered in an electronic composite book system meeting certain specified characteristics to be held only by persons who would undertake to execute those orders, as principal, at the limit price in the event a transaction inferior to the limit price is reported in the consolidated system; or (iii) prohibiting any person, whether acting as principal or agent, from accepting a market order unless such person undertakes to provide an execution for such order at least as favorable as the best composite quotation price (in sizes equal to or greater than the order size).[101]

### B. OVERREACHING

Another consideration in the Commission's determination to defer amendment or abrogation of off-board principal restrictions in December, 1975, was the possibility that small customers would be exposed to increased risks of overreaching by dealers in an environment characterized by an absence of those restrictions.[102] In particular, the Commission was concerned that retail firms would effect off-board transactions with customers accustomed to dealing with them as agents at prices less favorable than those which could be obtained for them had those firms acted as agent.

For example, if the market quoted on the NYSE floor for a particular security is 20 bid, 20¼ asked, and a retail member firm engaging in off-board market making in listed securities is quoting 20 bid, 20⅜ asked for that same security for for transactions of approximately the same size as the NYSE quotation, the retail market maker could be tempted to execute a customer's market or "not held" order (in size) to buy at 20⅜ as principal (excluding any mark-up which would be charged the customer) rather than transmitting the order to the NYSE floor, seeking a superior execution at 20¼ (excluding any commission which would be charged).

Under existing circumstances, in which most customers' orders to buy or sell reported securities are directed to the primary exchange market for execution and in which exchange members are prohibited from engaging in dealer activities in those securities otherwise than on exchange floors, opportunities for overreaching are more remote. First, transactions occurring on exchanges are, as discussed earlier, subject to a displacement mechanism which permits any broker or dealer to obtain execution priority by outbidding or outoffering other market participants. Thus, although retail firms which traditionally act as agent in executing customers' orders can deal as principal with customers on the exchange,[103] the ability of other firms to intervene in a proposed transaction if the proposed price varies from the current market price disciplines such retail firms' dealer activities.[104] In addition, the various exchanges impose specific limitations on the ability of members to fill as principal orders accepted by them for execution from other members (although those rules do not seem to apply to trades effected directly with non-member customers, except in the case of specialists' dealings).[105] Similarly, those firms which do act as dealers over-the-counter in listed securities in most cases confine their dealer activities to transactions with brokers and dealers or with institutional investors (who generally are sophisticated and are willing to trade in the third market only in situations where they believe they will receive a price at least as favorable as an exchange execution).

Many believe that removal of off-board principal restrictions would increase significantly the risk of overreaching in transactions in listed securities. In particular, it is feared that, if large retail firms are permitted to integrate their functions as agent and upstairs market maker in particular listed securities (in much the same way as they currently operate in effecting transactions for customers in non-listed securities), the temptations and opportunity for such firms to engage in overreaching will prove irresistible.[106] Of course, the mere fact that a firm will be able to act both as broker and dealer in the same listed security does not necessarily mean that overreaching will occur or that customers will receive less favorable executions than they do today; presumably, most firms will take appropriate steps to ensure that overreaching does not occur. Nonetheless, combining the broker and dealer functions for listed securities in a single entity able to conduct its business over-

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[100] In the December Release, the Commission expressly disclaimed any implication that it would tie abrogation of off-board principal restrictions to the achievement of any particular element of a national market system, such as a composite book. The Commission has determined not to include any rule proposal regarding the development and implementation of a composite book in connection with this proceeding. The Commission intends, however, to consider promptly the various issues associated with such a facility. See note 94 supra.

[101] The Commission is interested in receiving specific comments on these approaches.

[102] December Release, supra note 1, at 24.

[103] *See* note 104 infra.

[104] The extent to which this displacement process functions satisfactorily in a particular exchange market to prevent (or minimize the risk of) abuses by persons dealing directly with their customers, however, is dependent in part on the intensity of activity in that market. Thus, in the case of regional exchange markets, where order flow is not particularly large, or in the case of inactively traded securities in the primary exchange markets overreaching may be disciplined only by willingness of the specialist to intervene in mispriced transactions.

Nevertheless, the Commission is not aware of any evidence that overreaching occurs in exchange markets; accordingly, as more fully discussed infra, the rule proposals designed to deal with the possibility of overreaching in the trading of reported securities are limited in their application to dealer activities over-the-counter. However, as indicated in the discussion of the specific rule proposals, the Commission wishes to solicit the views of commentators on whether such rules should also apply to trading on exchange markets (either to minimize overreaching or to eliminate possible competitive disparities which could result from application of the rules only to over-the-counter dealer activities).

[105] For example, NYSE Rule 91 provides that a member may not take or supply securities as principal which are the subject of an order accepted by him for execution unless (1) he offers or bids for the security in the open market at a price more favorable than his proposed transaction price, (ii) the transaction price is justified by the condition of the market, and (iii) the member who gave him the order, after prompt notification, accepts the trade. See also NYSE Rule 76.

[106] The Commission recognizes that the conflicts of interest of an integrated firm, and the risks of overreaching, are equally present in the case of trading in non-listed securities. Moreover, in certain ways, the markets for over-the-counter securities present an even greater threat of abuse, since (i) there is no system to provide current reporting of transactions (and thereby discipline dealer behavior) and (ii) the quotation system which does provide real-time quotations to brokers and dealers, NASDAQ, provides information only with respect to the most substantial issuers whose securities are traded over-the-counter.

A complete examination of trading practices by dealers in the over-the-counter market and the possible extent of overreaching in that market is beyond the intended scope of this proceeding. Nonetheless, many of the considerations underlying the Commission's overreaching proposals may be equally applicable to the over-the-counter market. Accordingly, as discussed more fully infra, the Commission desires to solicit views of interested persons as to whether any of the overreaching proposals discussed in this release, if adopted for application to trading in listed securities, should be extended to cover dealer activities in non-listed securities.

the-counter could aggravate conflicts between the interests of the integrated firm (in generating profits from its dealer activities) and those of its customers (in receiving the most favorable price), and might increase the risks of abuse.

Conflicts of interest which result from the combination of the broker and dealer function are not limited to the trading function.[107] The extent of these conflicts has, from time to time, generated proposals calling for the complete segregation of the broker and dealer functions.

Indeed, shortly after the passage of the Act, the Commissioner, pursuant to statutory direction (contained in then Section 11(e) of the Act, which was repealed by Section 6(3) of the 1975 Amendments), conducted a study of the feasibility and advisability of the complete segregation of the functions of broker and dealer.[108] Although the Commission concluded that combination of the broker and dealer functions "involves a conflict of interest which is provocative of abuse of the fiduciary relationship inherent in the brokerage function," the Commission recommended that the Congress not enact legislation requiring complete segregation.[109] In so doing, the Commission indicated that, in its view, "the potentialities for flexible control and evolutionary development afforded by the administrative mechanisms" were more appropriate than complete segregation in dealing with conflicts of interest and possible abuses by brokers and dealers.[110]

The case has not yet been made for complete segregation of the broker and dealer function. However, in announcing this proceeding, the Commission has considered whether the possibility of overreaching could be best controlled by complete elimination of conflict situations in those circumstances where abuse is most likely if conflicts of interest are permitted to continue. Accordingly, as more fully discussed below, the Commission is considering, as one alternative to dealing with the overreaching problem through regulatory means, a limited type of segregation proposal prohibiting any person from acting as dealer in any reported security with any person other than a broker, dealer or financial institution. Indeed, Sections 11(b) and 15(c)(5) of the Act [15 U.S.C. 78k(b), 78o(c)(5)] confer ample power on the Commission to require a complete segregation of the broker and dealer function, if that is found "necessary or appropriate in the public interest and for the protection of investors, to maintain fair and orderly markets, or to remove impediments to and perfect the mechanism of a national market system."

To a certain degree, concerns relating to overreaching by integrated firms are mitigated by existing, well-established principles of common and federal securities law governing the relationship between securities professionals and their customers. Where a firm functions as a dealer with a retail customer and, by a course of conduct, has placed itself in a position of trust and confidence with respect to that customer, the firm acts in a fiduciary capacity.[111] The fiduciary duties assumed by such a dealer are in addition to the general duty of all dealers, under the so-called "shingle theory," to deal fairly with the public and to effect transactions in securities as dealer with customers at prices reasonably related to the current market for such securities.[112]

The standards of conduct applicable to a firm in a fiduciary relationship with a customer are well-established. For example, a broker-dealer who is also an investment adviser may not deal as principal with its customer in riskless principal transactions where similar transactions for non-advisory customers normally would be executed on an agency basis at a commission less than the mark-up which would customarily be imposed when executing transactions on a principal basis.[113] In addition, under both common and federal securities law principles, a firm which is in fact in a fiduciary relation to a customer—whether it calls itself a broker or a dealer—may not deal with its customer for its own account without making scrupulously full disclosure of the nature and extent of any adverse interest which the firm may have.[114] This standard requires disclosure not only of the capacity in which the firm is acting,[115] but also, taking into account access to better prices and the costs of achieving such access, any current market price at which the transaction would be effected which is better than the price the dealer affords to the customer.[116]

Under present circumstances, information concerning alternative executions in listed securities generally is not available to brokers and dealers in a convenient and meaningful way. Although the consolidated system does capture information regarding completed transactions in listed securities regardless of the market of execution, quotation information with respect to reported securities disseminated by the various market centers and made available to market professionals on terminals or other display devices continues to be inadequate for purposes of evaluating potential executions in these various centers. This is true for several reasons. First, not all market centers disseminate quotations regularly or on a timely basis.[117] In addition, none of the exchanges currently requires that quotations disseminated by it for machine display purposes be firm. Finally, no exchange or third market maker currently disseminates size for display in any quotation service.

If proposed Rule 11Ac1-1 is adopted, reliable firm quotation information from all market centers effecting transactions in reported securities will be available to brokers and dealers in a current and convenient manner (on terminals or other display devices). Under such circumstances, all market professionals who deal with customers would be obliged to recognize that machine-displayed quotation information (except when the bid and offer prices reflected are known to be inaccurate or there is a reasonable basis for believing that those prices are not currently binding

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[107] For a general description of these conflicts, see M. Mayer, Conflicts of Interest: Broker-Dealer Firms (1975).

[108] SEC, Report on the Feasibility and Advisability of the Complete Segregation of the Functions of Dealer and Broker (June 20, 1936 ("Segregation Study").

[109] Segregation Study at 109.

[110] Id.

[111] The Commission believes that retail broker-dealers, in many instances, in fact occupy that fiduciary position of trust and confidence with their customers. See Arleen W. Hughes, 27 SEC 629 (1948), aff'd sub nom. *Arleen W. Hughes* v. *SEC*, 174 F.2d 969 (D.C. Cir. 1949); see Loss, The SEC and the Broker-Deale, 1 Vand. L. Rev. 516 (1948).

[112] See Charles Hughes & Co., 13 SEC 676 (1943), aff'd sub nom. *Charles Hughes* v. *SEC*, 139 F.2d 434 (2d Cir. 1943), cert. denied, 321 U.S. 786 (1944); Duker & Duker, 6 SEC 386 (1939). See also Article III, Section 4 of the NASD's Rules of Fair Practice, requiring members to deal with customers at fair prices in over-the-counter transactions.

[113] Kidder Peabody & Co., Inc., 43 SEC 911 (1968). This prohibition is similar to the prohibition against a broker interpositioning another broker-dealer between himself and a market maker, or an investment adviser interpositioning a broker-dealer between a pool of assets managed by him and a market maker, in situations where that broker or pool of assets could deal directly with the market maker on as favorable a basis and the interpositioned broker performs no bona fide function in connection with the transaction. See Thomson & McKinnon, 43 SEC 785 (1968); Delaware Management Company, Inc., 43 SEC 392 (1967).

[114] Arleen W. Hughes, 27 SEC at 635-36; Restatement (Second) of Agency § 390 (1958).

[115] See Arleen W. Hughes, 27 SEC at 635; Rule 10b-10 [17 CFR § 240.10b-10]; cf. *Opper* v. *Hancock Securities Corp.*, 250 F. Supp. 668, 674 (S.D.N.Y. 1966), aff'd, 367 F. 2d 157 (2d Cir. 1966). In addition, a firm making an over-the-counter market in securities must disclose that fact when dealing with its customers as principal. *Chasins* v. *Smith Barney & Co., Inc.*, 305 F. Supp. 489 (1969).

[116] Arleen W. Hughes, 27 SEC at 636. See, e.g., *Doyen* v. *Bauer*, 211 Minn. 140, 300 N.W. 451 (1941); *Berkeley Sulphur Springs* v. *Liberty*, 10 N.J. Misc. 1066, 162 A. 191 (Ch. 1932); *Van Dusen* v. *Bigelow*, 13 N.D. 277, 100 N.W. 723 (1904); *Ridgeway* v. *McGuire*, 176 Ore. 428, 158 P. 2d. 893 (1945); *Rodman* v. *Manning*, 53 Ore. 336, 99 P. 657 (1909). In addition to these specific disclosures, a fiduciary is required to disclose any other material fact affecting the desirability of the transaction. Restatement (Second) of Agency § 390 (1958). See Section 17(a) of the Securities Act of 1933 [15 U.S.C. 77q]; Sections 10(b) and 15(c)(1) of the Act (15 U.S.C. 78j, 78o(c)(1)); Rules 10b-5 and 15c1-2 under the Act [17 CFR §§ 240.10b-5; 240.15c1-2].

[117] For example, one regional exchange does not currently make its quotations in multiply-traded securities available until after the close of trading in the primary exchange market. In addition, although the NASD has recently implemented a composite quotation service designed to make available all quotations in multiply-traded listed securities in a montage format, several of the largest third market dealers have elected not to insert quotations in that system.

upon persons making those bids and offers [118]) reflects current market prices and indicates the availability of alternative prices for a given security.[119]

Although application of the foregoing principles to transactions in listed securities should reduce the risks of overreaching if off-board principal restrictions are removed, especially in an environment characterized by an operational composite quotation system, reliance on such principles alone may not sufficiently reduce those risks. For example, customers may not be in a position to control adequately the activities of broker-dealers on the basis of these principles because, among other reasons, they lack sufficient market information to realize when those principles have been ignored. Moreover, many average investors are unaware of the distinction between the broker and the dealer relationships and hence disregard the possibility that the advice and service offered by a firm may be affected by an independent interest.[120]

In addition, private enforcement of dealers' obligations in this area may not be particularly effective because it is difficult for the individual to prove, under today's circumstances, that a particular transaction price was less favorable than an available alternative execution, and, in any event, such an effort is costly and time-consuming for an investor.[121] Even available arbitration procedures offered by the self-regulatory organizations do not provide a satisfactory solution to this problem in a typical situation, where the difference between the price received and the best available alternative price may be only ⅛ or ¼ point per share. Finally, in view of the generality of the principles of conduct referred to above, as applied to a great variety of individual transactions, both investors and dealers could benefit from the articulation of more specific and concrete standards.

In light of these factors, the Commission has determined to consider, as part of this proceeding, whether the adoption of prophylactic regulatory measures is necessary to protect investors against overreaching instead of relying exclusively upon traditional fiduciary and fair dealing principles to perform that function. In this regard, the Commission is publishing for comment specific rules governing the conduct of dealers effecting transactions in listed securities otherwise than on exchanges.[122] In considering these proposals in the context of removing off-board principal restrictions, commentators are requested to evaluate them in light of the legal standards discussed above and the impact of current disclosure of last sale information and quotations on overreaching by integrated firms.

C. EQUAL REGULATION AND SURVEILLANCE

Together with addressing concerns as to fragmentation and overreaching, the Commission intends to consider whether additional regulatory action by the Commission is necessary to assure that a trading environment for listed securities characterized by the absence of off-board principal restrictions (if the Commission determines to remove them) would be governed by appropriately equal regulation, affording a fair field of competition among market centers, market makers and customers, and will be subject to adequate surveillance.

1. *Equal regulation*.—In the December Release, the Commission recognized that the removal of off-board principal restrictions would give rise to certain "equal regulation" concerns: [123]

> Finally, it must be acknowledged that the existing scheme of market maker regulation embodied in certain [C]ommission rules, intended to govern specialist behavior, does burden certain market makers while not affecting others. Careful consideration must be given, therefore, to elimination or modification of these rules when a definite date is set for the elimination of exchange barriers to the commencement of over-the-counter two-sided market making in round lots by member firms.[124]

The Commission believes that it may be appropriate to modify or eliminate certain Commission and exchange rules in response to removal of off-board principal restrictions. [125] While the Commission further believes that this rule review, both by the exchanges and the Commission, should proceed expeditiously (and should be continuing), the Commission has not yet been convinced that any Commission or exchange rules must be modified as a prerequisite to elimination of off-board principal restrictions.[126]

Rule 11b-1 under the Act (17 CFR § 240.11b-1) effectively requires the Amex and NYSE to have rules imposing "affirmative" and "negative" trading obligations upon specialists.[127] The Commission is inclined to conclude that retention of certain specialist obligations would be appropriate at this stage of development of the national market system in view of the unique trading position of the primary market specialist (particularly in light of his virtual monopoly and unique knowledge of limit orders). The Commission solicits comment on this issue and will, of course, give careful consideration to such rule changes as exchanges believe they should file under Rule 11b-1 and otherwise to enable their specialists to compete fairly with other market makers in this new trading environment.

Both the Amex and the NYSE have rules prohibiting specialists from accepting orders directly from institutional customers. [128] Such rules could discriminate unfairly against specialists on those exchanges in seeking to compete with other market makers following removal of off-board principal restrictions.[129] It is

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[118] Proposed Rule 11Ac1-1 under the Act would establish specific exceptions from the Rule's general firmness requirements. See Securities Exchange Act Release No. 13626 (June 14, 1977), -- FR ______ (1977) at 13-19. NASDAQ quotations are required, under the rules of the NASAD, to be firm for a normal unit of trading under all circumstances. See NASD By-Laws, Schedule D, Paragraph C(3) (b) of Section I.

[119] Implementation of a composite quotation system and other market improvements can be expected to subject all market professionals to increasingly stringent standards of conduct in their dealings with customers.

[120] Segregation Study, supra note 108, at xv. We noted in the December Release, however, that individual investors may be expected to become increasingly aware of the risks associated with direct dealings with securities professionals on a principal basis. December Release, supra note 1, at 23-24.

[121] Reconstruction of all relevant information concerning the market for a particular security at a particular time is a lengthy, complex task.

[122] See discussion infra.

[123] See Section 3(a)(36) of the Act (15 U.S.C. 78(a)(36)).

[124] December Release, supra note 1, at 25-26 (footnote omitted).

[125] See NMAB Off-Board Letter, supra note 17, at 19-22.

[126] In its letter of comment on off-board trading rules, the NMAB noted that there were a number of areas in which different specialists or market makers in listed equity securities were treated differently. NMAB Off-Board Letter, supra note 17, at 19-22. For example, the NMAB noted that: [c]ertain existing regulations of the Commission [such as Rules 11b-1 and 10b-6] impose burdens on specialists on the New York and American Stock Exchanges, but on no other specialisst or market makers; or on specialists generally but not on non-exchange market makers. . . . In addition, the rules of each national securities exchange governing the conduct of its specialists differ from those of other exchanges, and from the rules of the National Association of Securities Dealers, Inc. which apply to non-exchange market makers entering quotations in the NASDAQ system.

Id. at 20. With respect to such differences, the NMAB stated that: the Commission should not have, or require that exchanges retain, . . . rules which result in different specialists or market makers in listed securities being treated differently, unless it is clear that the circumstances in which they operate are so different as to require that they have different rules applicable to them.

Id. The NMAB did not, however, recommend any amendments to specific Commission or self-regulatory organization which it believed were necessary to meet this standard. In considering the possible modification of Commission or self-regulatory rules, therefore, the Commission will require a significant amount of additional information in order to determine whether those differences which do exist result in competitive advantages for certain classes of market professionals, and, if so, whether such advantages are unfair and not necessary or appropriate in furtherance of the purposes of the Act.

[127] See Amex Rule 170 and NYSE Rule 104. The Commission, pursuant to Rule 11b-1, has exempted regional specialists, and third market makers are subject to no such obligations. Section 11(b) of the Act itself may be considered to raise an equal regulation question in providing that it is unlawful for a specialist to effect transactions as broker on the exchange except upon a market or limited price order. See NMAB Off-Board Letter, supra note 17, at 20, 22.

[128] See Amex Rule 190(b) and NYSE Rule 113(a).

[129] See Section 6(b)(5) of the Act (15 U.S.C. 78f(b)(5)). Conversely, these rules may discriminate unfairly between institutions and other investors not precluded from dealing directly with the primary market specialists. However, in view of the exclusive access of these specialists to information with respect to the vast majority of limit orders, reten-

also possible that in today's environment, and perhaps more so in an environment without restrictions on off-board trading, the burdens on competition represented by these rules can no longer be justified by reference to the purposes of the Act. The Commission therefore invites comment on whether these rules should be eliminated or, alternatively, whether those rules serve purposes under the Act which warrant their retention, at least for some period of time.

The Commission recognizes that there are additional rules of exchanges and of the Commission which operate to distinguish between specialists and over-the-counter market makers.[130] The Commission intends, and urges each exchange, to examine its rules with a view to assessing their operation in a trading environment characterized by the absence of off-board principal restrictions. The Commission invites comment on any Commission or self-regulatory rules which, in the view of commentators, should be altered after elimination of off-board trading restrictions in view of the equal regulation standards of the Act.

2. *Surveillance.*—The Commission recognizes that, if off-board principal restrictions are removed, the Commission and self-regulatory organizations will be required to review, and possibly to restructure, their market surveillance programs.[131] These programs generally involve market monitoring techniques designed to identify instances of unusual trading activity in a particular security. In a trading environment characterized by the absence of off-board principal restrictions, the Commission and self-regulatory organizations will need to implement new transactional audit trail procedures adequate to carry out their surveillance responsibilities.[132] With respect to surveillance of transactions by exchange members effected over-the-counter, it also would appear that the exchanges and the NASD should proceed to develop appropriate plans for surveillance of off-board trading activity, including, if necessary, plans for the allocation of surveillance functions among self-regulatory organizations, and should be prepared to present those plans in connection with this proceeding.[133]

## IV. Removal of Off-Board Trading Restrictions

As indicated above, the proposed amendments to Rule 19c-1 would immediately expand the existing Rule to permit an exchange member to effect over-the-counter agency transactions in listed equity securities with any other person not also represented as agent by that member (i.e., precluding only "in-house" agency cross transactions).[134] Proposed Rule 19c-2 would, after December 31, 1977, permit an exchange member to effect over-the-counter principal and "in-house" agency cross transactions in reported securities.

### A. Off-Board Principal Restrictions

The Commission's reasons for concluding that off-board principal restrictions impose burdens on competition which are neither necessary nor appropriate in furtherance of the purposes of the Act, and an analysis of the benefits which would be conferred upon the markets if these restrictions were abrogated, are discussed above and set forth in the December Release.[135] Since that time, no showing has been made that those conclusions and views should be altered. The Commission's proposal to proceed to remove off-board principal restrictions effective January 1, 1978, does warrant, however, further consideration of the potential problems of fragmentation and overreaching, and the Commission anticipates that those issues will be thoroughly explored in the course of this proceeding.[136]

Since one of the chief benefits sought in connection with abrogation of off-board principal restrictions is the addition of market making capital and skill to the markets for listed securities,[137] the Commission has considered whether those restrictions should be removed altogether or only to the extent necessary to permit exchange members to make bona fide continuous, two-sided markets over-the-counter, thus allowing exchanges to continue to prevent their members from effecting other kinds of principal transactions in listed securities otherwise than on the floor of an exchange. The Commission has concluded tentatively that no purpose would be served by limiting the scope of its proposed action with respect to off-board principal restrictions, and is concerned, in any event, that it might not be possible to delineate market making activity from other dealer activity for this purpose and that efforts to restrict the right to effect over-the-counter principal transactions to persons engaging in genuine market making would not be effective.

Self-regulatory organization attempts to define bona fide market making, or regulate those holding themselves out as market makers in various respects (e.g., by imposing requirements as to continuity, depth, competitiveness, etc.), have not been completely successful. For example, there does not appear to be any appropriate way of ensuring that a market maker's bids and offers remain truly "competitive."[138] In the absence of workable requirements as to the competitiveness of quotations, a market maker who

tion of these rules, until such information is made available to other market makers, may be appropriate.

[130] E.g., exception (xi) to Rule 10b-6 (governing purchase by certain persons during distributions) under the Act (17 CFR § 240.-10b-6) permits purchases by a prospective underwriter otherwise than on an exchange ten or more business days prior to the proposed commencement of the distribution. See NMAB Off-Board Letter, supra note 17, at 20.

[131] See Sections 6(b)(1), 15A(b)(2), and 19(g) of the Act (15 U.S.C. 78f(b)(1), 78o-3(b)(2) and 78s(g)). These provisions require that the exchanges and the NASD have the capacity to and in fact enforce member compliance wiht the Act and the respective organizations' rules.

[132] In this regard, the Commission wishes to receive comment on any alteration in the Commission's existing recordkeeping rules under Section 17(a) of the Act (15 U.S.C. 78q(a)) which commentators believe would be useful in this regard. The Commission is especially interested in receiving proposals from self-regulatory organizations and exchange member firms as to programs which would ensure that, for purposes of self-regulatory organization surveillance and member firm compliance with their legal responsibilities, adequate records of off-board principal transactions are maintained. Such proposals should detail specific kinds of information to be kept for the purpose of enabling firms to demonstrate their compliance with requirements applicable to offboard principal transactions in reported securities. See general discussion of overreaching supra and discussion of specific overreaching proposals infra.

[133] See Section 17(d) of the Act (15 U.S.C. 78q(d)). Rule 17d-2 under the Act (17 CFR § 240.17d-2) authorizes the filing of plans allocating regulatory responsibility among various self-regulatory organizations. Securities Exchange Act Release No. 12935 (October 28, 1976), 41 FR 49091 (1976). Any such plan should provide for comprehensive review of such trading without causing duplication or undue expense to brokers and dealers who are members of such self-regulatory organizations.

[134] Existing Rule 19c-1 only requires exchange rules to permit members to effect over-the-counter agency transactions in listed equity securities with third market makers and non-member block positioners.

[135] See discussion supra; see also December Release, supra note 1, at 17-28.

[136] See discussion of fragmentation and overreaching supra.

[137] Elimination of off-board principal restrictions, of course, could also yield such other benefits as stimulation of technological innovation by professional participants in the markets and existing market centers (i.e., exchanges and third market makers).

[138] Certain measures could be suggested, such as requiring at least one side of a market maker's quotation to be at least equal in price (and, perhaps, in size) to the best bid or best offer reflected in a composite quotation system, or to be no further "away" from the last sale reported in the consolidated system than, for example, ¼ of a point. The Commission does not believe, however, that it would be practical or useful to impose such mechanical requirements on all market makers.

Self-regulatory efforts to develop criteria in this area have been confined to imposing somewhat vague requirements on market makers, such as: "Each quotation entered by a registered market maker must be reasonably related to the prevailing market." NASD By-Laws, Schedule D ("Schedule D"), paragraph C(3)(b) of Section I. The NASD monitors quotations in NASDAQ and identifies instances in which certain parameters are exceeded by those quotations, but no NASD disciplinary action has ever been based solely upon a market maker's failure to observe the NASD's tests concerning quotations "reasonably related to the prevailing market." See also Schedule D, paragraph C(5) of Section I (limiting the right to re-enter quotations in NASDAQ in the event of an "unexcused withdrawal") and NYSE Rule 104.10(4) (requiring specialist quotations to "bear a proper relation to preceding transactions and anticipated succeeding transactions").

does not wish to buy or sell securities at any particular time can, as a practical matter, avoid inquiries and the need to effect transactions merely by making certain that his bid and offer are unattractive to potential buyers and sellers. Indeed, non-competitive market maker quotations are not unusual today. Unless a satisfactory test of the competitiveness of quotations can be devised, prohibitions against dealing only on one side of the market (i.e., as a buyer or a seller only), and, possibly, rules requiring dealers to stand ready to buy and sell on a regular and continuous basis for a specified period, can be viewed as unenforceable and unreasonably discriminatory. Moreover, viewed from an economic standpoint, such a prerequisite to publicizing a willingness to buy or sell securities as principal or agent (i.e., that such indications be two-sided), whether by inserting bids or offers in an inter-dealer quotation system or otherwise, seems unjustifiable.[139]

The above discussion is not intended, however, to suggest that affirmative tests of market making (e.g., requirements as to two-sided quotations and that quotations bear a reasonable relation to the current market price) are inappropriate for purposes of determining special or exempt credit status or entitlement to the time and place advantages of proprietary trading on exchange floors, trading forums which, by their nature, cannot be used equally by all persons and are not readily expandable.

In any event, there has been no demonstration to date that non-market maker off-board principal trades present unique regulatory concerns, particularly since (i) overreaching by non-market makers in their dealings with customers is no more difficult to address than overreaching by market makers, and (ii) it has not been shown that the loss of small dealer trades from the primary exchanges to the over-the-counter market, in view of the relatively small percentage of all transactions such trades would seem to represent, would contribute significantly to fragmentation of the markets.[140] Thus, no compelling reasons have been presented to show why off-board principal restrictions should not be eliminated for all categories of transactions in reported securities which exchange members may wish to effect as principal over-the-counter.[141]

### B. REMAINING OFF-BOARD AGENCY RESTRICTIONS

When the Commission adopted Rule 19c-1 under the Act, it did not express a definitive judgment whether to require exchanges, at some time in the future, to permit members to effect "in-house" cross transactions, acting as agent for both buyer and seller.[142] Thus, Rule 19c-1 was drafted to require changes in exchange rules only to the extent necessary to permit members to effect agency transactions in listed equity securities with third market makers and over-the-counter block positioners. The Commission's analysis in the December Release of the burdens on competition represented by off-board agency restrictions as they existed prior to adoption of Rule 19c-1 focused primarily on two particular effects of those restrictions: (i) the boycott of third market makers (who thus were deprived of an opportunity to compete for agency orders handled by exchange members); and (ii) the impediment represented by those restrictions to exercise of brokerage judgment in seeking favorable execution opportunities for customers. As formulated and adopted, Rule 19c-1 effectively eliminated the third market boycott, at least to the extent that that boycott was the result of off-board agency restrictions theretofore imposed by exchange rules. While Rule 19c-1 does permit brokers greater latitude in exercising judgment as to how best to serve agency customers than previously existed,[143] their exercise of such judgment is still encumbered to some degree by remaining off-board agency restrictions. In addition, other persons, such as third market brokers, still are precluded from effecting transactions in listed equity securities for exchange members seeking the most favorable executions of customer orders in listed securities.[144] In the absence of a showing that these particular remaining off-board agency restrictions should be retained, it would appear that they should be removed promptly.

The problems raised by "in-house" crosses are somewhat more complex than those associated with other types of off-board agency transactions. In the December Release, the Commission noted that, if "in-house" crossing of relatively small customer orders in listed securities were permitted to occur and should occur to a significant extent, that activity might have a fragmenting effect on the markets similar to that feared in connection with the removal of off-board principal restrictions.[145] The Commission expressed considerable doubt, however, in the absence of convincing evidence to the contrary, as to whether "in-house" crossing of small retail orders, if permitted, would occur to any significant degree, and whether "in-house" crossing of block trades would contribute materially to fragmentation of the markets.[146] In addition, the Commission acknowledged that, if firms were permitted to effect "in-house" crosses and found it profitable to do so, certain economic benefits currently denied to firms capable of executing such trades, and denied also to their customers, would be realized.[147]

As noted above,[148] the NMAB submitted its views on "in-house" agency cross transactions to the Commission in September, 1976, before reaching its conclusions with respect to off-board principal restrictions. In that context, a majority of the NMAB's members concluded that existing restrictions on such transactions "do not impose a significant burden on competition or, to the extent that they do, such burden is outweighed by * * * countervailing policy consideratons."[149] Four members of the NMAB concluded that those restrictions "are anti-competitive and that the alleged adverse consequences from their removal are speculative and have been exaggerated."[150] Although the Commission continues to question, as it did in December 1975, whether the burdens on competition represented by exchange restrictions prohibiting "in-house" agency cross transactions are significant (at least when compared to off-board principal restrictions),[151] the Commission is inclined to agree that persons favoring retention of those restrictions, at least with respect to reported securities, have not shown why they should be retained, particularly in an environment in which off-board principal trades in those securities are permitted.[152]

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[139] The NASD requires that quotations entered in NASDAQ be two-sided. See note 118 supra. Proposed Rule 11Ac1-1 under the Act would require continuous disclosure of quotations in reported securities by all exchanges and persons who hold themselves out as market makers, and, subject to certain exceptions, would require those quotations to be firm for at least a normal unit of trading or any larger size indicated. However, exchanges would be required, if proposed Rule 11Ac1-1 were adopted, to include one-sided interest as part of the exchange quotation when such interest constitutes the best bid or offer.

[140] The consolidated system will immediately capture and reflect all over-the-counter trades in reoprted securities in any case. See discussion of fragmentation supra.

[141] Persons who believe that elimination of off-board principal transactions should be limited to certain classes of market professionals should be prepared to demonstrate the bases for those beliefs in connection with this proceeding.

[142] See December Release, supra note 1, at 36-40.

[143] Rule 19c-1, which removed most exchange restrictions on the ability of members to effect over-the-counter agency trades, appears to have had virtually no impact to date on historical patterns of market selection by exchange members acting as brokers. See discussion of experience under Rule 19c-1 supra.

[144] See letter to the Commission from Institutional Networks Corporation, dated February 11, 1977, concerning Rule 19c-1 under the Act.

[145] December Release, supra note 1, at 36-40.

[146] Id. at 37-38. With respect to small orders, there was no meaningful demonstration that the savings to retail firms which could be obtained from executing those orders "in-house" would outweigh the risks inherent in doing so. As to blocks, the Commission noted that, since such trades are regularly executed on regional exchanges under existing circumstances in order to avoid interacting with buying and selling interest in the primary market, little would be lost by permitting "in-house" executions. Id. at 38.

[147] Id. at 38-39.

[148] See note 15 supra.

[149] NMAB Agency Letter, supra note 15, at 2.

[150] Id. at 9.

[151] December Release, supra note 1, at 39-40.

[152] A similar conclusion, apparently, was reached by "[m]any members of the Board" in connection with the NMAB's deliberations concerning off-board principal restrictions. See NMAB Off-Board Letter, supra note 17, at 6 n. 2.

With respect to "in-house" crossing of relatively small transactions, it would be incongruous to permit an exchange member to effect transactions with non-professional customers as principal at, for example, prices of 20 bid and 20¼ offered, but to preclude that member from acting as agent for such customers by crossing their orders "in-house" at or between those dealer prices.[153] In addition, no persuasive reason has been suggested as to why the removal of remaining off-board agency restrictions applicable to "in-house" crossing of small orders in reported securities is any more likely to result in increased fragmentation of the markets than would removal of off-board principal restrictions. In addition, it appears to the Commission that the theoretical possibility that such transactions would contribute materially to market fragmentation should be discounted.[154]

Finally, the ability to effect "in-house" agency crosses in an environment countenancing "in-house" execution of customers' orders as principal might stimulate development of new trading strategies advantageous to customers: firms prepared to buy stock as principal could, for example, offer to "stop" a purchasing customer at a given price for a period of time and, before executing the order as principal, either (i) hold the order for execution at any better price offered by another customer during that period or (ii) represent the order during that period in a composite quotation system at a price ⅛ of a dollar above the price the dealer is offering to pay.

With respect to "in-house" agency cross transactions of large or block size, the Commission understands that firms which are engaged in block trading permit displacement of the primary market (when they do permit it) only on a voluntary basis and avoid buying or selling interest represented on the primary market floor by transmitting block crosses to exchange markets other than the primary market where circumstances (including costs) suggest that such action would be to their advantage.[155] Thus, prohibitions against "in-house" execution of blocks are not effective today insofar as they attempt to subject blocks to the auction process as it is today conducted on exchanges. Finally, rules requiring agency portions of block trades in reported securities to be effected on an exchange are incompatible with the conclusion that principal transactions in reported securities (including any portion of a block "positioned" by a firm for its own account) may no longer be subjected to such restrictions.

C. LIMITATIONS ON THE SCOPE OF THE PROPOSALS

Proposed Rule 19c-2, removing off-board principal restrictions and remaining off-board agency restrictions applicable to "in-house" agency cross transactions, would apply only to reported securities. Therefore, over-the-counter principal and "in-house" agency cross transactions in listed securities not included in the consolidated system,[156] or which, if they are included, are not equity securities (i.e., debt securities[157]), would continue to be governed by exchange restrictions on such transactions. In addition, the proposed amendments to Rule 19c-1 under the Act would extend, as does existing Rule 19c-1, only to listed equity securities.[158] The Commission's inclination to limit the scope of proposed Rule 19c-2 to reported securities is based primarily on the concern that fragmentation and overreaching may represent more serious problems in connection with removal of off-board principal and "in-house" agency cross restrictions for non-reported securities than is the case with respect to reported securities.[159]

While removal of all remaining off-board trading restrictions applicable to member transactions in listed securities which are not reported securities might improve the depth and liquidity of the markets for those securities,[160] the trading environment for such securities would not be subject, under current circumstances, to the price discipline of continuous and comprehensive disclosure of last sale prices and quotations.[161] Pricing of reported securities, on the other hand, will continue to be subject to the discipline exerted by disclosure of last sale prices in the consolidated system and of current and firm quotation prices, factors which may be essential to efficient and fair over-the-counter trading in listed securities.[162] In addition, if it is necessary to adopt new standards for over-the-counter dealer conduct with retail customers in listed securities in connection with removal of off-board trading restrictions, as some commentators have suggested, certain of the regulatory approaches to the problem of overreaching which rely upon the availability of comprehensive current quotation information might not be capable of adaptation to over-the-counter dealings

[153] See Section 11A(a)(1)(C)(v) of the Act (15 U.S.C. 78k-1(a)(1)(C)(v)).

[154] A possible fragmentation problem in connection with "in-house" crosses of small agency orders might, however, occur in connection with determination of opening prices particularly in the primary markets). Since primary exchange specialists today establish opening prices on the basis of their comprehensive knowledge of orders on both sides of the market seeking executions at the opening, less knowledge of such interest (a result of pre-opening orders being withheld for execution "in-house") could result in the establishment of opening prices which less perfectly reflected the true "state of the market"' at the time trading commences. However, this problem, if it develops, might be ameliorated if exchanges were to adopt procedures requiring members, prior to commencement of each trading day, to disclose periodically the aggregate buying and selling interests represented by their customers' pre-opening orders (and of changes in the numbers of such orders during, for example, the fifteen minutes preceding the opening). In any event, it should not be necessary for specialists to hold and execute all pre-opening orders merely to perform the function of opening trading at appropriate prices.

[155] See December Release, supra note 1, at 38.

[156] Listed equity securities which are not reported securities comprise primarily sole listings on the major regional exchanges. The following listed equity securities are "eligible" for inclusion in the consolidated system within the meaning of the joint industry plan ("Plan"), declared effective by the Commission pursuant to Rule 17a-15 under the Act, governing the consolidated system: (i) securities listed on the NYSE, (ii) securities listed on the Amex, and (iii) securities listed on any other exchange meeting the original listing requirements of the NYSE or Amex. See Section VI of the Plan (which also provides that a security ceases to be eligible if less than 25 percent of the transactions in that security occur on exchanges). Network A of the consolidated system carries last sale reports for all NYSE-listed equity securities. Network B of that system carries last sale reports for all Amex-listed equity securities plus approximately 30 listed equity securities of other exchanges. Network B also carries, largely for historical reasons, last sale reports for Amex-listed bonds (plus certain bonds listed on other exchanges except the NYSE). See Section XIV of the Plan. While limiting the removal of certain off-board trading restrictions to listed equity securities included in the consolidated system appears desirable at this time, the Commission questions any continuing validity to the converse notion that inclusion in national market system facilities, such as the consolidated system, should be limited to such securities or otherwise confined by the criteria used in the Plan.

[157] While the Commission doubts that exchange off-board trading restrictions applicable to securities other than equity securities have had a significant effect on competition, comment is invited on that assessment. See September Release, supra note 3, at 12-13. E.g., NYSE Rule 396 and Amex Rule 6, governing off-board trading in bonds, are not applicable to transactions (principal or agency) involving more than nine bonds and, accordingly, may be characterized essentially as odd-lot rules. While such rules should be scrutinized for compliance with the Act, as in taking place in the case of the two cited rules pursuant to Section 31(b) of the 1975 Amendments, it does not appear that those issued need be resolved in this proceeding.

[158] Rule 19c-1 was not confined to reported securities because the Commission did not believe that agency transactions not involving "inhouse" crossing would raise any fragmentation or overreaching concerns.

[159] See discussion of fragmentation supra.

[160] Such a result might ensue if those exchange members which acted as over-the-counter market makers for such securities prior to exchange listing were to resume their market making activities in those securities.

[161] The Midwest and Pacific Stock Exchanges do provide last sale ticker services with respect to their respective sole listings. While over-the-counter principal transactions in such unreported listed securities are not included on those tickers (at least today), it might be argued that the partial last sale information made available by means of those tickers would be sufficient to assure continued efficient pricing and fair over-the-counter dealing even if all off-board trading restrictions applicable to those securities were removed. In addition, if exchange members were permitted to and did trade in unreported listed securities over-the-counter, quotations for at least the more actively traded of these securities presumably would be available on NASDAQ.

[162] See discussion of fragmentation supra.

in listed securities which are not reported securities.[163]

The Commission, however, has not firmly concluded that off-board trading restrictions governing over-the-counter member trading in listed equity securities not included in the consolidated system should be retained, and the Commission intends to revisit this issue.[164]

Accordingly, commentators should address the desirability of, and the special risks attendant to, extending proposed Rule 19c-2 to all listed equity securities.

## V. Proposed Rules Regarding Overreaching

### A. Alternatives Considered

Assuming that additional affirmative action is necessary to prevent exchange members from dealing unfairly with customers after off-board principal restrictions are removed with respect to reported securities, the Commission has considered several alternative methods of regulating such transactions to preclude or minimize the possibility of overreaching. These alternatives have been embodied in the following proposed rules:

(i) Rule 15c5-1(A) (17 CFR § 240.15c5-1(A)), which would preclude any dealer from effecting transactions in reported securities over-the-counter as principal with any person other than a broker, dealer or financial institution (the "person limit approach").[165]

(ii) Rule 15c5-1(B) (17 CFR § 240.15c5-1(B)), which would require any dealer effecting transactions in reported securities over-the-counter with any person other than a broker, dealer or financial institution to do so only at a price at least as favorable to such person as the highest bid (in the event the dealer is buying) or lowest offer (in the event a dealer is selling), in size equal to or greater than the transaction size, reflected in a display of quotation information disseminated pursuant to proposed Rule 11Ac1-1 under the Act (the "price limit approach").[166]

(iii) Rule 15c5-1(C) (17 CFR § 240.15c5-1(C)), which would require confirmation disclosure of the highest bid price and lowest offer price made available to quotation vendors in accordance with proposed Rule 11Ac1-1 and displayed on a terminal or other display device at the time of any over-the-counter principal transactions in a reported security with any person other than a broker, dealer or financial institution (the "disclosure approach").

(iv) Rule 15c5-1(D) (17 CFR § 240.15c5-1(D)), which would require dealers effecting transactions in reported securities over-the-counter with any person other than a broker, dealer or financial institution to do so at prices no less favorable to such persons than they know (or reasonably should believe), under all the relevant circumstances, could be obtained for such persons if they were to act for them in an agency capacity (the "fair dealing approach").

1. *The Person Limit Approach.*—The person limit approach would involve a limited segregation of the broker and dealer function and would be designed to avoid the overreaching problem entirely by precluding direct over-the-counter dealings in reported securities between a firm acting as principal and those types of customers which the Commission and others fear either lack the sophistication or the market information necessary to enable them to protect their own interests in such transactions.[167] The person limit approach would also, as a practical matter, substantially reduce any potential for significant fragmentation after removal of off-board principal restrictions by preventing internalization of retail order flow and thereby deterring integrated firms from making over-the-counter markets.[168] While this approach might deter retail firms from making over-the-counter markets in listed securities, the approach might not discourage other well-capitalized non-retail oriented firms, such as block positioning exchange members, from engaging in that activity (to take maximum advantage of their relationships with non-retail customers).[169]

The person limit approach does, however, raise a number of concerns. First, as noted above, the imposition of such a restriction might deter at least one likely class of potential entrants into over-the-counter market making—retail firms—from engaging in that business,[170] thus reducing the degree to which market making competition in listed securities, with its attendant benefits, will be enhanced (unless such firms choose to enter the market making business by developing a specialist operation on an exchange to compete with existing specialists and directing its order flow to that operation).[171] Second, this approach would prevent retail customers from dealing with a firm as principal even if its prices were the best available.[172] Finally, the person limit approach could prevent retail firms from realizing full benefits of their elaborate (and costly)

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[163] See discussion infra.

[164] It may be that, notwithstanding the concerns expressed above, competition alone will ensure an appropriate environment for removal of these restrictions.

[165] The term "financial institution" would be defined in Rule 15c5-1(A) (and the other overreaching rules proposed herein) to mean any person (other than a broker or dealer) which (i) is other than a natural person, or (ii) is in the business of exercising investment discretion with respect to the account of any other person.

The proposed definition of financial institution is analogous to the definition of the term "institutional investment manager" in Section 13(f)(5)(A) of the Act (15 U.S.C. 78m(f)(5)(A)).

This formulation of such a definition may not be regarded as providing protection to persons who ought to be protected by any overreaching rule. Commentators are specifically requested to comment on the adequacy of this definition, to suggest ways of avoiding vagueness in defining "financial institution" appropriately, and to formulate any alternative definitions they believe would improve upon the definition the Commission proposes to employ.

[166] For purposes of this approach, prices would be required to be compared on a basis including any commission which would customarily be charged as agent, and any commission equivalent, markup or differential to be charged, so that the aggregate price paid to a seller or paid by a buyer would not be less favorable to the customer than the aggregate amount the customer would have received or paid had the dealer acted as agent and achieved an execution for the customer at the highest bid or offer price reflected in a composite quotation system in a size equal to or greater than the transaction size.

[167] For the same reason, proposed Rules 15c5-1(B), 15c5-1(C) and 15c5-1(D) would also apply only to dealer transactions with retail customers (i.e., persons other than brokers, dealers or financial institutions). Commentators are requested, however, to consider whether application of any of the approaches proposed herein, if adopted, should be extended to dealing with certain persons or entities currently included within the definition of "financial institution" (e.g., because those persons or entities, even though technically included within that definition, are also believed to lack the sophistication or market information necessary to protect themselves from overreaching).

[168] Since a major incentive to engage in off-board market making seems to be the opportunity for large retail firms to internalize their customer order flow and earn both a "jobber's turn" and a commission (or its equivalent) on each transaction, elimination of that possibility might reduce the likelihood that some retail firms, in an environment permitting off-board principal trades only with non-retail customers, would attempt to make markets off-board.

[169] Similarly, third market makers would not appear to be materially affected by this approach, at least insofar as their present businesses are concerned, since the Commission understands that such firms do not, for the most part, deal directly with persons other than brokers, dealers and financial institutions.

[170] This is not to suggest that any greater weight should be given to the need to promote dealer competition than to protect retail customers.

[171] Such an option, of course, if feasible at all, is available today, although rules on the primary exchanges precluding specialists from having institutional customers effectively force firms which have such customers to choose between retaining their institutional customers and becoming specialists on those exchanges.

[172] It is almost inconceivable that a retail firm would ever put itself in a position where, if its prices were the best available, the firm would be obliged to either send its retail customers to another broker or secure inferior executions for those customers. Persons favoring adoption of the person limit approach should consider whether an exception to that approach to permit principal transactions at the most favorable price to the non-professional customer reflected in a composite quotation system might ameliorate this concern. Even with such an exception, however, the person limit approach would require non-professional customers, for the most part, to employ the services of a broker, even when those services are not desired.

systems for handling small order inquiry, relegating such firms who determine to engage in over-the-counter market making in listed securities to a position analogous to that of an exchange specialist, who relies for the most part on brokers to direct order flow to him.

The NMAB, in commenting on off-board trading restrictions, stated that it was "sharply divided" on the question whether principal transactions by firms with their retail customers should be prohibited if off-board principal restrictions are removed.[173] Those members of the NMAB favoring such a prohibition argued that it would (i) reduce fragmentation and facilitate the creation of a national market system,[174] (ii) avoid opportunities for self-dealing and overreaching,[175] and (iii) promote competition and reduce potential concentration in both market making and retail activities by eliminating the "inherent advantage" which, it is argued, large retail firms with the capability to internalize their order flow would have.[176] Those opposing any prohibition on off-board principal transactions with retail customers argued that (i) such a prohibition would represent a burden on competition which would unfairly disadvantage certain market participants (i.e., large retail firms),[177] (ii) there has been no demonstration of actual abuses involving overreaching which would justify such radical action,[178] (iii) there is an inherent difficulty in defining which investors need protection from potential overreaching, and, therefore, that any definition of "retail customer" which would be developed would likely be arbitrary,[179] (iv) retail customers might incur higher execution charges than they would if they were permitted to deal directly with market makers,[180] and (v) it is anomalous to attempt to protect investors in transactions involving securities "with the most competitive markets" but not those with less active markets, about which less information is available.[181]

2. *The Price Limit Approach.*—The price limit approach is designed to assure that, for a substantial volume of principal transactions with non-professional customers, dealers (including integrated firms) would be required to buy and sell at prices established in part by market participants other than themselves, prices which presumably reflect an independent response to current market information and existing supply and demand in the market place. Thus, such dealers would be prevented, to a significant degree, from effecting principal transactions with their own non-professional customers at unfair and unrepresentative prices.

[173] NMAB Off-Board letter, supra note 17 at 11.

[174] Id. at 12–13.

[175] Id. at 14–16.

[176] Id. at 16–17.

[177] Id. at 17–18.

[178] Id. at 18.

[179] Id. at 18–19.

[180] Id. at 19.

[181] Id.

Operation of the price limit approach is illustrated by the following example: Assume Broker-Dealer X, an integrated retail firm, receives an order from a retail customer (i.e., a person who is not a broker, dealer or financial institution)[182] to purchase 500 shares of YZ Corporation ("YZ"), a NYSE-listed company, at the market. In giving the order to Broker-Dealer X, the customer specifies that he wishes to purchase the YZ stock from X acting as principal (since he knows that X makes a market in YZ). At the time the order is received, the last sale for YZ, as reported in the consolidated system, is $20 per share.

The order is transmitted by the customer's registered representative to Broker-Dealer X's trading room, where the trader consults the firm's commission rate schedule and a composite quotation display available to him on a cathode ray tube device. The commission rate schedule indicates that the customer would customarily be charged 25 cents per share for a transaction of the size proposed in the $20 price range. The composite quotation display indicates the following offers and sizes for YZ:

| | Offer price | Size |
|---|---|---|
| Exchange A | 20⅛ | 200 |
| Exchange B | 20⅛ | 300 |
| Market Maker C | 20¼ | 600 |
| Market Maker D | 20¼ | 400 |
| Exchange E | 20⅜ | 100 |

Armed with this information, Broker-Dealer X's trader can readily compute the best composite quotation execution (as defined in proposed Rule 15c5–1(B)(c)(1)) against which to compare any execution as principal with that customer: since the order is for 500 shares, the best composite quotation execution would be 20¼ (the lowest offer price in size equal to or greater than the proposed transaction size) plus ¼ (the customary commission charge if X were to act as agent), or 20½. Thus, Broker-Dealer X would be permitted to deal with the customer as principal if the net price to the customer, including any commission equivalent, mark-up, or differential to be charged, is not higher than 20½.[183]

[182] See note 165 supra.

[183] Any commission equivalent, mark-up, or differential charged in connection with the transaction must not be excessive. See Shearson Hammill & Co., 42 SEC 811 (1965); Trost & Co., Inc., 12 SEC 531 (1942); F. S. Johns & Co., Inc., 43 SEC 124 (1966); *Charles Hughes* v. *SEC*, 139 F. 2d 434 (2d Cir. 1943), cert. denied 321 U.S. 786 (1944); *Barnett* v. *U.S.*, 319 R. 2d 340 (8th Cir. 1963); *SEC* v. *Seaboard Securities Corp.* (1966–67 Transfer Binder) Fed. Sec. L. Rep. (CCH) ¶ 91,697 (S.D.N.Y. 1966); See also NASD Rules of Fair Practice, Art. III, Sec. 4, in NASD Manual, at 2054; Ross Securities, Inc., 40 SEC 1064 (1962); Gleason d/b/a Sherman Gleason and Co., 15 SEC 639 (1944); Graham & Co., 38 SEC 314 (1958); Boren & Co., 40 SEC 217 (1960); Naftalin & Co., Inc., Securities Exchange Act Release No. 7220 (January 10, 1964); Norman J. Adams & Co., Inc., Securities Exchange Act Release No. 7327 (May 27, 1964); Samuel B. Franklin & Co., 38 SEC 908 (1959), *aff'd sub. nom. Samuel B. Franklin & Co.* v. *SEC*, 290 F. 2d 719 (9th Cir. 1961), cert. denied 368 U.S. 889 (1959).

On the other hand, if the order were for only 100 or 200 shares, the permissible net price which Broker-Dealer X could charge the customer would be 20⅜ (i.e., 20⅛, the lowest offer price in size equal to or greater than the proposed transaction size, plus ¼, the customary agency commission).[184] If the order were for 700 shares or more, proposed Rule 15c5–1(B) would not apply, since there would be no offer price displayed in size equal to or greater than the proposed transaction size and, therefore, no best composite quotation execution against which to compare the net price of the principal trade.

In commenting on proposed Rule 15c5–1(B), interested persons are requested to focus specifically on the possible impact of the price limit approach on market making activities and on public investors. First, the Commission requests commentators to evaluate whether restrictions on dealer activities based on machine-displayed quotations are appropriate in light of the fact that those quotations would not always be firm because of the contemplated exceptions to the requirement of firmness contained in proposed Rule 11Ac1–1.[185] The fact that quotations under proposed Rule 11Ac1–1 under the Act will not always be firm may be viewed as so severe a defect in the price limit approach that it should not be adopted. Commentators should also consider the competitive impact of restricting prices at which over-the-counter principal transactions with non-professional customers may occur by reference to bids and offers in a composite quotation system (assuming that those bids and offers, even when not firm, would generally be reflective of the market for a particular security).

Finally, commentators should consider the possibility that, since the price limit approach, as proposed, would not apply to transactions in size greater than the sizes for which bids and offers are entered in a composite quotation system, a material number of sizeable principal transactions (or even medium-sized transactions if exchanges and third mar-

[184] This, of course, assumes that Broker-Dealer X would charge the customer the same per share commission rate for executing a 100 or 200-share transaction in a particular security as it would be executing a 500-share transaction in that security.

[185] See Securities Exchange Act Release No. 13626 (June 14, 1977), ____ FR ____ (1977) and Rule 11Ac1–1; note 118 supra. In this regard, the Commission specifically requests comments on whether an alternative formulation of the price limit approach should be developed to cope with periods during which quotations reflected in a composite quotation system are not firm because of high transaction volume or unusual market conditions or for other reasons. See Rule 11Ac1–1(b)(3). For example, commentators should consider the feasibility of requiring, during such periods, adherence to a price limit referenced to bids and offers in the most active market for the security involved obtained by telephone immediatley prior to consummation of a principal transaction. They should also consider whether dealers should be relieved of their obligations when they know that quotations reflected in the composite quotation system are not firm.

ket maker quotations are made available only with minimal size) with non-professional customers would not be protected from overreaching by this approach. Commentators should evaluate the effect of such a development on public investors, and, if they believe the coverage of Rule 15c5-1(B) is not sufficient in that regard, suggest alternative proposals for applying the price limit approach to transactions in size above the maximum displayed in a quotation system (including appropriate methods of determining the price levels at which principal transactions should be permitted).

3. *The Disclosure Approach.*—The disclosure approach would operate on the traditional theory underlying the federal securities law that "[s]unlight is * * * the best of disinfectants; electric light the most efficient policeman."[196] Disclosure on the confirmation of the highest bid price and lowest offering price displayed in a composite quotation system at the time of a principal over-the-counter transaction with a non-professional customer is intended to enable the customer to evaluate for himself the quality of principal executions.[197] The disclosure approach is, of course, based on existing principles of common and federal securities law relating to disclosures which must be made by any person in a fiduciary capacity who desires to deal with a customer as principal; [198] the disclosure approach, however, would apply to all dealers effecting transactions in listed securities with non-professional customers regardless of the existence of a fiduciary relationship.

Proposed Rule 15c5-1[C] would require confirmation disclosure to a non-professional customer of the inside machine-displayed quotation (i.e., the highest bid price and lowest offer price) in connection with an over-the-counter principal transaction in a reported security regardless of whether or not the number of shares involved in the transaction is less than or equal to the largest size displayed in a composite quotation system at the time of the transaction. The Commission believes that disclosure of that inside market would still be useful to investors despite the fact that the inside machine-displayed quotation may not indicate actual alternative execution possibilities for that amount of securities if a transaction involves a number of shares greater than that which could be obtained based on bids and offers in a composite quotation system (in reliance on Rule 11Ac1-1). Machine-displayed quotations after adoption of proposed Rule 11Ac1-1 would, in the Commission's view, be a reliable indicator of at least the round lot market for a particular security, even during periods when those quotations would not be required to be firm because of one of the exceptions provided in that rule. As a result, customers would have an effective yardstick against which to measure the price they receive or pay in a principal transaction and a means of preventing firms from dealing at prices which are less favorable than the best alternative execution available if they acted as agent.

Of course, any number of factors, including the size of the transaction, the volatility, depth and liquidity of the security involved, and general market conditions, could cause the price of an individual principal transaction (excluding any commission equivalent or differential charged in connection with that transaction) to be less favorable than the inside machine-displayed quotation (particularly if that inside quotation is for minimum size). For this reason, the Commission believes that disclosure of the inside quotation may be an effective method of deterring overreaching without limiting the price flexibility of firms wishing to deal as principal over-the-counter with their non-professional customers.[199]

4. *The fair dealing approach.*—The fair dealing approach (a variation of the price limit approach discussed earlier) would impose a broad fair dealing obligation on dealers effecting over-the-counter transactions in reported securities with non-professional customers. Under this approach, dealers could not effect principal transactions with such customers at prices which are less favorable to those customers than they know, or reasonably should believe, under all the relevant circumstances, could be obtained for such customers if they were to act as agent in effecting such transactions.

The fair dealing approach would detail certain circumstances to be considered by dealers in establishing prices at which they may deal with non-professional customers.[200] These circumstances would include, but not be limited to, the size of the transaction and the dealer's knowledge of, access to, and costs in obtaining access to, other buying and selling interest in the reported security involved (including communications and clearance and settlement costs), his knowledge of the prices of recently completed transactions in that security and his knowledge of the size of such buying and selling interest and such completed transactions.

Finally, proposed Rule 15c5-1(D) would include a presumption that, with respect to transactions in reported securities, dealers know that, if they act as agent, they can obtain prices for non-professional customers at least as favorable as the highest bid and lowest offer prices, in size equal to or greater than the transaction size, made available in accordance with proposed Rule 11Ac1-1 and displayed by any quotation vendor at the time of any principal trade.[201]

As an alternative to the fair dealing formulation embodied in Rule 15c5-1(D), interested persons should consider the desirability and feasibility of requiring any dealer who effects as principal over-the-counter transactions in reported securities with non-professional customers to have the burden of demonstrating that the price to the customer was at least as favorable as the best alternative execution available under all relevant circumstances, or that the dealer acted under those circumstances in the best interests of the customer.

### B. ADDITIONAL CONSIDERATIONS

In considering the specific approaches discussed herein designed to ameliorate concerns regarding overreaching, commentators are also requested to focus on certain additional considerations relating to the scope of the proposals and to the need for additional regulatory action to deal with overreaching in other contexts.

1. *Reported securities.* As discussed earlier, the approaches to overreaching embodied in proposed Rules 15c5-1(A), 15c5-1(B), 15c5-1(C) and 15c5-1(D) are limited in their application to transactions in reported securities. The primary reason for this limitation, as mentioned above in connection with the discussion of proposed Rule 19c-2,[202] is that two of the three approaches proposed herein—the price limit approach and the disclosure approach—rely on the availability of comprehensive, current and reliable quotation information from the various market centers where transactions in listed securities could take place.[203] Since the prime means of ensuring such availability, proposed Rule 11Ac1-1, would be limited in its applica-

[196] L. Brandeis, Other People's Money 92 (1914).

[197] A similar approach to over-the-counter dealer transactions was proposed, but finally rejected by the Commission in 1942. That proposal would have required every dealer executing a purchase or sale in the over-the-counter market to disclose to his customer the best independent bid and asked price available upon the exercise of reasonable diligence, or the fact that no such bid or asked price could be so ascertained. See Securities Exchange Act Release No. 3940 (April 2, 1947).

[198] See discussion supra.

[199] Persons commenting on the disclosure approach should specifically address whether such approach, if adopted, should be limited in its scope to transactions in size equal to or less than the greatest size displayed in a composite quotation system. In addition, commentators should consider whether the required confirmation disclosures should be limited to the side of the market involved in the transaction (i.e., the highest bid price in the case of a sale by a customer or the lowest offer price in the case of a purchase by a customer). In considering these aspects of the disclosure approach, the Commission believes that cost analyses relating to the various alternatives would be helpful in establishing the appropriate degree of disclosure to be sought (assuming this approach is adopted).

[200] Proposed Rule 15c5-1(D)(c) (17 CFR § 240.15c5-1(D)(c)).

[201] Proposed Rule 15c5-1(D)(b) (17 CFR § 240.15c5-1(D)(b)). Commentators are requested to focus on the approriateness of such a presumption in light of the various exceptions from firmness provided in proposed Rule 11Ac1-1. See Securities Exchange Act Release No. 13626 (June 14, 1977), -- FR ------ (1977).

[202] See discussion supra.

[203] In addition, the presumption contained in paragraph (b) of proposed Rule 15c5-1(D) relies on the type of quotation information contemplated by Rule 11Ac1-1.

tion to reported securities, adaptation of these approaches to over-the-counter dealings in listed securities which are not reported securities would be extremely difficult.

Nonetheless, the Commission wishes to consider, as discussed above, the appropriateness of removing the remaining off-board principal and agency restrictions for all listed equity securities. Commentators favoring removal of off-board trading restrictions for all listed equity securities should address whether the price limit or disclosure approaches should be modified to adapt them to equity securities which are not reported securities, and, if so, what reference should be used to measure permissible transactions or as the basis for required confirmation disclosure.[134]

2. *Exchange markets.*—The overreaching approaches proposed herein also would not be applicable to transactions in reported securities occurring on national securities exchanges. The principal reason for suggesting such a limitation, as discussed above in the Commission's general consideration of overreaching concerns, is that principal transactions occurring on exchange markets seem less likely to have overreaching implications because of the displacement process and exchange rules limiting dealer activity. It may be argued, however, that application of the overreaching approaches only to over-the-counter tranactions by dealers in reported securities may result in competitive disadvantages to over-the-counter market makers relative to exchange dealers (e.g., exchange specialists). Commentators are requested to assess the competitive impacts of the proposed overreaching rule and to consider the impacts of, and the need for, applying such rules to principal transactions effected on exchange.

3. *Over-the-counter securities.*—As indicated previously, risks of overreaching are also present in the case of trading in non-listed securities.[135] Moreover, in certain ways the markets for non-listed securities present an even greater threat of abuse particularly in light of the absence of current last sale reporting.[136] Commentators are requested therefore, to consider the need for, and the impact of, application of the types of approaches embodied in proposed Rules 15c5-1(A), 15c5-1(B), 15c5-1(C), and 15c5-1(D) to the over-the-counter markets generally.[137]

[134] In addition, commentators favoring the fair dealing approach embodied in Rule 15c5-1(D) should consider the possible application of that approach (particularly the presumption contained in paragraph (b)) to non-reported securities.

[135] See discussion supra.

[136] See note 106 supra.

[137] The Commission notes in this regard that it is considering, independent of this proceeding, amendment of Rule 10b-10 under the Act (17 CFR § 240.10b-10) to require confirmation disclosure similar to that contemplated by proposed Rule 15c5-1(C) in connection with principal transactions in non-listed securities quoted in NASDAQ. See Securities Exchange Act Release No. 13661 (June 23, 1977) -- FR ------ (1977).

4. *Agency transactions.* The overreaching rules proposed herein would be applicable only to dealer activity. Certain of the approaches discussed, particularly the confirmation disclosure approach contemplated by proposed Rule 15c5-1(C), appear to be capable of application also to agency transactions in reported securities. Commentators favoring the disclosure approach, therefore, should also consider and comment on the feasibility and desirability of extending that approach to cover agency transactions as well—whether occurring over-the-counter or on exchanges.[138]

## VI. Texts of Proposed Rules

The Securities and Exchange Commission hereby proposes to amend Rule 19c-1 under the Act (17 CFR § 240.19c-1) and to adopt Rule 19c-2 under the Act (17 CFR § 240.19c-2) pursuant to its authority under the Securities Exchange Act of 1934 (15 U.S.C. 78a et seq., as amended by Pub. L. No. 94-29 (June 4, 1975)), and particularly Sections 2, 3, 6, 11, 11A, 17, 19, and 23 thereof (15 U.S.C. 78b, 78c, 78f, 78k, 78k-1, 78q, 78s, and 78w). These rule changes are intended to amend the rules of national securities exchanges to conform those rules to the requirements of the Act and to further the purposes of the Act, particularly the protection of investors, the maintenance of fair and orderly markets, and the removal of impediments to and the facilitation of the establishment of a national market system. The texts of the proposed amendments to Rule 19c-1 and of Rule 19C-2 are as follows:

1. Rule 19c-1 under the Act (17 CFR 240.19c-1) is amended to read as follows:

**§ 240.19c-1 Governing certain off-board agency transactions by members of national securities exchanges.**

The Rules of each national securities exchange shall provide as follows:

No rule, stated policy or practice of this exchange shall prohibit or condition, or be construed to prohibit or condition or otherwise limit, directly or indirectly, the ability of any member acting as agent to effect any transaction otherwise than on this exchange with another person except (when such member also is acting as agent for such other person in such transaction) in any equity security listed on this exchange or to which unlisted trading privileges on this exchange have been extended.

2. Rule 19c-2 under the Act (17 CFR 240.19c-2) is amended to read as follows:

**§ 240.19c-2 Governing off-board agency cross and principal transactions by members of national securities exchanges.**

After December 31, 1977, the rules of each national securities exchange shall provide as follows:

[138] Application of the disclosure approach to agency transactions could be justified even if the disclosure approach as applied to dealers did not cover exchange transactions.

(a) No rule, stated policy or practice of this exchange shall prohibit or condition, or be construed to prohibit, condition or otherwise limit, directly or indirectly, the ability of any member acting as agent for both buyer and seller to effect any cross transaction otherwise than on this exchange in any reported exchange security.

(b) No rule, stated policy or practice of this exchange shall prohibit, condition, or be construed to prohibit, condition, or othewise limit, directly or indirectly, the ability of any member acting as principal to effect any transaction otherwise than on this exchange with any person in any reported exchange security.

(c) For purposes of this rule, the term "reported exchange security" shall mean any equity security listed on this exchange or to which unlisted trading privileges on this exchange have been extended as to which last sale information is reported in the consolidated transaction reporting system.

(Secs. 2, 3, 6, 11, 17, 19, 23, Pub. L. 78-291, 48 Stat. 881, 882, 885, 891, 897, 898, 901, as amended by Secs. 2, 3, 4, 6, 14, 16, 18, Pub. L. 94-29, 89 Stat. 97, 104, 110, 137, 146, 155 (15 U.S.C. 78b, 78c, 78f, 78k, 78q, 78s, 78w, as amended by Pub. L. 94-29 (June 4, 1975)); Sec. 7, Pub. L. 94-29, 89 Stat. 111 (15 U.S.C. 78k-1).)

3. The Securities and Exchange Commission hereby proposes Rules 15c5-1(A), 15c5-1(B), 15c5-1(C) and 15c5-1(D) (17 CFR §§ 240.15c5-1(A), 240.15c5-1(B), 240.15c5-1(C), and 240.15c5-1(D)) pursuant to its authority under the Securities Exchange Act of 1934 (15 U.S.C. 78a et seq., as amended by Pub. L. No. 94-29 (June 4, 1975)), particularly Sections 2, 3, 6, 9, 10, 11, 11A, 15, 15A, 17, and 23 thereof (15 U.S.C. 78b, 78c, 78f, 78i, 78j, 78k, 78k-1, 78o, 78o-3, 78q, and 78w). The texts of the proposed rules are as follows:

**§ 240.15c5-1(A) Governing off-board dealer transactions.**

(a) After December 31, 1977, no dealer shall effect any transaction in any reported security as principal otherwise than on a national securities exchange with any person other than a broker, dealer or financial institution.

(b) For purposes of this section:

(1) The term "financial institution" shall mean any person (other than a broker or dealer) which (i) is other than a natural person, or (ii) is in the business of exercising investment discretion with respect to the account of any other person.

(2) The term "reported security" shall mean any equity security as to which last sale information is reported in the consolidated transaction reporting system.

**§ 240.15c5-1(B) Governing off-board dealer transactions.**

(a) After December 31, 1977, no dealer shall effect any transaction in any reported security as principal otherwise than on a national securities exchange with any retail customer at a price less favorable to such retail customer than the best composite quotation execution, if any.

(b) For purposes of paragraph (a) of this section, the price at which a principal transaction with a retail customer is effected shall be deemed to be the transaction price to be reported for inclusion in the consolidated transaction reporting system plus (in the case of an order to buy) or minus (in the case of an order to sell) an amount equal to any commission equivalent or differential to be charged by such dealer in connection with the transaction.

(c) For purposes of this section:

(1) The term "best composite quotation execution" shall mean the lowest offer price (in the case of an order to buy) or the highest bid price (in the case of an order to sell), in a size equal to or greater than the transaction size, made available to quotation vendors pursuant to § 240.11Acl-1 (Rule 11Acl-1 under the Act) and displayed by any such vendor on a terminal or other display device at the time such transaction is (or reasonably should have been) effected, plus (in case of an order to buy) or minus (in the case of an order to sell).

(i) If the dealer does not act as agent for retail customers in effecting transactions in reported securities, an amount equal to any commission equivalent or differential customarily charged by such dealer to such a retail customer when acting as dealer in effecting transactions in securities in the price range of the security to be purchased or sold in amount equal to the transaction size; or

(ii) If the dealer does act as agent for retail customers in effecting transactions in reported securities, an amount equal to any commission customarily charged by such dealer to such a retail customer when acting as agent in effecting transactions in securities in the price range of the security to be purchased or sold in amounts equal to the transaction size.

(2) The term "retail customer" shall mean any person other than a broker, dealer or financial institution.

(3) The term "financial institution" shall mean any person (other than a broker or dealer) which (i) is other than a natural person, or (ii) is in the business of exercising investment discretion with respect to the account of any other person.

(4) The term "reported security" shall mean any equity security as to which last sale information is reported in the consolidated transaction reporting system.

(5) The term "quotation vendor" shall have the meaning provided in § 240.11Ac 1-1 (Rule 11AC1-1 under the Act).

## § 240.15c5-1(C) Governing off-board dealer transactions.

(a) After December 31, 1977, no dealer shall effect any transaction in any reported security as principal otherwise than on a national securities exchange with any retail customer unless such dealer shall disclose to such retail customer, at or before the completion of the transaction, by means of a written notification meeting the requirements of § 240.10b-10 (Rule 10b-10 under the Act), both the highest bid price and the lowest offer price made available to quotation vendors pursuant to § 240.11Acl-1 (Rule 11Acl-1 under the Act) and displayed by any such vendor at a terminal or other display device at the time such transaction is (or reasonably should have been) effected.

(b) For purposes of this section:

(1) The term "retail customer" shall mean any person other than a broker, dealer or financial institution.

(2) The term "financial institution" shall mean any person (other than a broker or dealer) which (i) is other than a natural person, or (ii) is in the business of exercising investment discretion with respect to the account of any other person.

(3) The term "reported security" shall mean any equity security as to which last sale information is reported in the consolidated transaction reporting system.

(4) The term "quotation vendor" shall have the meaning provided in § 240.11 Acl-1 (Rule 11Acl-1 under the Act).

(5) The term "completion of the transaction" shall have the meaning provided in § 240.15cl-1 (Rule 15cl-1 under the Act).

## § 240.15c5-1(D) Governing off-board dealer transactions.

(a) After December 31, 1977, no dealer shall effect a transaction in any reported security with a retail customer as principal otherwise than on a national securities exchange at a price (excluding any commission equivalent or differential customarily charged by such dealer in connection with the transaction), which under all of the relevant circumstances, such dealer knows (or has reason to believe) is less favorable to such customer than could be obtained for such customer by such dealer if he were to act as an agent for such customer in effecting such transaction.

(b) For purposes of paragraph (a) of this section, a dealer shall be presumed to know, in connection with any principal transaction in a reported security with a retail customer, that, if he were to act as an agent for such customer, he could obtain for such customer a price (exclusive of any commission customarily charged by such dealer in connection with the transaction) at least as favorable to him as the highest bid price or the lowest offer price for that reported security, in a size equal to or greater than the transaction size made available to quotation vendors pursuant to § 240.11Acl-1 (Rule 11Acl-1 under the Act) and displayed by any such vendor on a terminal or other display device at the time such transaction is (or reasonably should have been) effected.

(c) For purposes of paragraph (a) of this section, relevant circumstances shall include, but not be limited to, the size of the transaction and such dealer's knowledge of, access to, and costs in obtaining access to, other buying and selling interest in such reported security (including communications and clearance and settlement costs), his knowledge of the prices of recently completed transactions in such security and his knowledge of the size of such buying and selling interest and such completed transactions.

(d) For purposes of this section:

(1) The term "reported security" shall mean any equity security as to which last sale information is reported in the consolidated transaction reporting system.

(2) The term "retail customer" shall mean any person other than a broker, dealer or financial institution.

(3) The term "financial institution" shall mean any person (other than a broker or dealer) which (i) is other than a natural person, or (ii) is in the business of exercising investment discretion with respect to the account of any other person.

(4) The term "quotation vendor" shall have the meaning provided in § 240.11 Acl-1 (Rule 11Acl-1 under the Act).

(Secs. 2, 3, 6, 11, 15, 17, 23, Pub. L. 78-291, 48 Stat. 881, 882, 885, 891, 895, 897, 901, as amended by Secs. 2, 3, 4, 6, 11, 14, 18, Pub. L. 94-29, 89 Stat. 97, 104, 110, 121, 137, 155 (15 U.S.C. 78b, 78c, 78f, 78k, 78o, 78q, 78w, as amended by Pub. L. 94-29 (June 4, 1975)); Secs. 9, 10, Pub. L. 78-291, 48 Stat. 889, 891 (15 U.S.C. 78i, j); Sec. 1, Pub. L. 75-719, 52 Stat. 1070, as amended by Sec. 7, Pub. L. 88-467, 78 Stat. 574 and Sec. 12, Pub. L. 94-29, 89 Stat. 127 (15 U.S.C. 78o-3, as amended by Pub. L. 94-29 (June 4, 1975)); Sec. 7, Pub. L. 94-29, 89 Stat. 111 (15 U.S.C. 78k-1).)

## VII. RECENT SOURCE MATERIALS AND REQUEST FOR PUBLIC COMMENT

Set forth below is a list of source materials relating to off-board trading restrictions and associated issues which have become available since the September Report.[238]

### COMMISSION RELEASES UNDER THE ACT

No. 11628 (September 2, 1975), 40 FR 41808 (1975) Report to Congress regarding exchange off-board trading rules and announcement of rulemaking proceeding.

No. 11689 (September 29, 1975), 40 FR 45203(1975) Postponement of oral hearings and announcement of tentative schedule.

No. 11899 (December 4, 1975) Conclusion of rulemaking proceeding.

No. 11942 (December 19, 1975), 41 FR 4507 (1976) Adoption of Rule 19c-1.

No. 11943 (December 19, 1975), 41 FR 838 (1976) Order disapproving proposed rule change filed by the New York Stock Exchange.

No. 12018 (January 14, 1976), 41 FR 3369 (1976) Effectiveness of amendments to short sale rules.

No. 11943 (December 19, 1975), 41 FR 838 (1976) Order disapproving proposed rule change filed by the New York Stock Exchange.

No. 12018 (January 14, 1976), 41 FR 3369 (1976) Effectiveness of amendments to short sales rules.

No. 12055 (January 27, 1976), 41 FR 8075 (1976) Proposals relating to Section 11(a).

No. 12138 (February 25, 1976) Notice of further clarification of availability of last sale information on a real-time Basis.

No. 12157 (March 2, 1976), 41 FR 10662 (1976) Rules of national securities exchanges relating to membership and association with members.

[238] See note 5 supra for reference to citations of earlier source materials. Also see note 21 supra for citation of exchange rule change filings responding to Rule 19c-1 and Commission orders of approval.

No. 12159 (March 2, 1976 Request for public comment on issues related to the development of a composite central limit order repository.

No. 12181 (March 11, 1976), 41 FR 11898 (1976) Institution of proceeding to consider certain rule changes filed by the New York Stock Exchange regarding foreign membership (File Nos. SR-NYSE-76-7 and SR-NYSE-76-8).

No. 12249 (March 23, 1976), 41 FR 13679 (1976) Notice of proceeding to consider disapproval of proposed rule change filed by the New York Stock Exchange regarding off-board trading restrictions (File No. SR-NYSE-76-5).

No. 12403 (May 3, 1976) Extension of comment period on issues relating to composite limit order repository.

No. 12664 (July 28, 1976) Notice of withdrawal of proposed rule change filed by the New York Stock Exchange regarding off-board trading restrictions (File No. SR-NYSE-76-5).

No. 12670 (July 29, 1976), 41 FR 32856 (1976) Publication of proposed Rule 11Ac1-1 governing quotations in listed securities.

No. 12717 (August 19, 1976), 41 FR 36094 (1976) Order approving proposed rule change filed by the American Stock Exchange rescinding the "New York City" rule (File No. SR-Amex-76-17).

No. 12806 (September 16, 1976), 41 FR 41432 (1976) Notice of proposed Rule 10b-10 regarding confirmations.

No. 12859 (October 4, 1976), 41 FR 47121 (1976) Order approving proposed rule change filed by the New York Stock Exchange rescinding the "New York City" rule (File No. SR-NYSE-76-47).

No. 12935 (October 28, 1976), 41 FR 49091 (1976) Adoption of Rule 17d-2 authorizing the filing of plans allocating regulatory responsibility among self-regulatory organizations.

No. 13091 (December 21, 1976), 41 FR 56530 (1976) Notice of rulemaking proceeding on short sale regulation.

No. 13092 (December 21, 1976), 41 FR 56542 (1976) Notice of revised proposals regarding short sales in connection with underwritten offerings.

No. 13388 (March 18, 1977), 42 FR 16746 (1977) Proposed rules regarding Section 11(a).

No. 13508 (May 5, 1977), 42 FR 25318 (1977) Adoption of Rule 10b-10 governing confirmations.

No. 13626 (June 14, 1977), -- FR ------ (1977) Publication of revision of proposed Rule 11Ac1-1 governing quotations in listed securities.

COMMISSION REPORTS TO CONGRESS

Securities and Exchange Commission, Report to Congress on Rules of National Securities Exchanges Which Limit or condition the Ability of Members to Effect Transactions Otherwise than on Such Exchanges (September 2, 1975).

Securities and Exchange Commission, Report to Congress on the Effect of the Absence of Fixed Rates of Commissions (December 1, 1975).

Securities and Exchange Commission, Second Report to Congress on the Absence of Fixed Rates of Commissions (March 29, 1976).

Securities and Exchange Commission, Third Report to Congress on the Effect of the Absence of Fixed Rates of Commissions (August 10, 1976).

Securities and Exchange Commission, Fourth Report to Congress on the Effect of the Absence of Fixed Rates of Commissions (January 28, 1977).

Securities and Exchange Commission, Fifth Report to Congress on the Effect of the Absence of Fixed Rates of Commissions (May 26, 1977).

COMMISSION DECISIONS

In re: Application of the Boston Stock Exchange for Unlisted Trading Privileges in the Common Stock of Ludlow Corporation, Securities Exchange Act Release No. 13359 (March 11, 1977), petition for review pending.

As indicated above, interested persons are invited to submit written presentations of views, data and arguments concerning the proposed amendments to Rule 19c-1 under the Act and proposed Rules 19c-2, 15c1-5(A), 15c1-5(B), 15c1-5(C) and 15c1-5(D) thereunder and the issues discussed above (including written presentations responding to written or oral presentations of others). As an aid to persons interested in submitting such presentations, particular items as to which the Commission has specifically requested the submission of comments are set forth below. Each item in the following enumeration has been described below in a cursory manner; for a complete discussion, interested persons should refer to the indicated portions of the text of this release.

1. Comments concerning experience under Rule 19c-1 under the Act since January 2, 1977 (p. 2, n. 30).

2. Comments from persons believing that off-board trading restrictions no longer represent burdens on competition or that, in any event, they should be retained to further the purposes of the Act (pp. 35-36).

3. Comment on proposed amendments to Rule 19c-1 and proposed Rule 19c-2 under the Act.

4. Comments attempting to demonstrate that the purposes of the Act would be furthered by retention of off-board trading restrictions and with respect to the relative merits (if any) of those restrictions as a means of fulfilling those purposes compared to other means (p. 42).

5. Comments on (i) the consequences of any additional market fragmentation believed to result from removal of off-board trading restrictions and ways of addressing those consequences, and (ii) feasible steps following such removal to assure adequate surveillance and equal regulation (pp. 43-44).

6. Comments as to the importance of an operational composite quotation system to maintenance of pricing efficiency and whether absence of such a system would justify delay in removal of off-board principal restrictions.

7. Comments setting forth the bases for any views contrary to the Commission's understanding that price competition, in the current market environment, has had only a limited influence on broker order routing behavior.

8. Comments as to whether (i) limit order protection would necessarily be reduced if off-board principal restrictions are removed, and (ii) any likely diminution in such protection would justify retention of those restrictions.

9. Comments evaluating proposed Rules 15c1-5(A), 15c1-5(B), 15c1-5(C) and 15c1-5(D) in light of current legal standards applicable to dealer conduct and the impact of current last sale and quotation disclosure on overreaching.

10. Comments on specialists' obligations under Rule 11b-1 under the Act.

11. Comments on exchange rules prohibiting specialists from engaging in direct institutional dealings.

12. Comments on other Commission or self-regulatory organization rules which should be altered after elimination of off-board trading restrictions in view of the equal regulation standards of the Act.

13. Comments on appropriate changes in the Commission's recordkeeping rules and proposals from self-regulatory organizations and exchange member firms as to surveillance programs which would ensure that adequate records of off-board principal transactions are maintained.

14. Comments by persons believing that off-board principal restrictions should be removed only to the extent necessary to permit bona fide market making, indicating the reasons for that belief.

15. Comments on the Commission's proposal to limit application of proposed Rule 19c-2 under the Act to reported securities.

16. Comments on the Commission's proposed definition of "financial institution" for purposes of its proposed overreaching rules.

17. Comments on whether the protections contemplated by the Commission's proposed overreaching rules should be extended to certain persons who are included within the proposed definition of "financial institution" for purposes of those rules.

18. Comments on the person limit approach, particularly whether the proposed rule should permit principal transactions with non-professional customers at the most favorable price shown in a composite quotation system.

19. Comments on the price limit approach, particularly with respect to (i) the impact of the approach on market makers and investors, (ii) the consequences of the exceptions to quotation firmness in proposed Rule 11Ac1-1 under the Act, (iii) the competitive impact of restricting prices for over-the-counter principal transactions with non-professional customers, and (iv) the size limitation employed in the proposed rule.

20. Comments on the disclosure approach, particularly with respect to (i) whether application of the proposed rule should be limited to transactions in size equal to or less than the greatest size displayed in a composite quotation system, and (ii) whether only the bid or offer price representing the other side of the market should be required to be disclosed.

21. Comments on the fair dealing approach, particularly with respect to (i) the appropriateness of the presumption as to the availability of bids and offers in a composite quotation system,

and (ii) other formulations of that approach, such as requiring the dealer to demonstrate that the price to the customer was at least as favorable as the best alternative execution available or that he acted in the best interests of the customer.

22. Comments as to whether certain of the Commission's proposed overreaching rules should be modified to apply to all listed securities.

23. Comments with respect to the competitive impacts of the proposed overreaching rules and whether they should be modified to apply to exchange transactions.

24. Comments as to whether overreaching rules of the type proposed should be modified to apply to over-the-counter trading generally.

25. Comments as to whether certain of the Commission's proposed overreaching rules should be modified to apply to agency transactions (regardless of whether they occur over-the-counter or on exchanges).

Persons wishing to appear at the public hearings should contact George T. Simon, Division of Market Regulation, Room 390, Securities and Exchange Commission, 500 North Capitol Street, Washington, D.C. 20549, telephone number 202-376-7470, not later than July 22, 1977. The public hearings will be held, beginning Monday, August 1, 1977, at 10 a.m., in Room 776 at the above address.

Persons intending to appear at the hearings should submit the text of any prepared statements not later than four business days prior to their appearance and are invited, at the time of their appearance, to make copies of their statements available to interested persons attending the hearings. Written presentations of views, data and arguments should be submitted not later than August 10, 1977, and written presentations responding to the written or oral presentations of others should be submitted not later than August 24, 1977. All submissions should refer to Commission File No. 4-180 and be delivered, together with 30 copies, to George A. Fitzsimmons, Secretary of the Commission, Room 892, at the above address. Copies of all written submissions and hearings transcripts will be made available at the Commission's Public Reference Room, 1100 L Street NW., Washington, D.C.

By the Commission.

GEORGE A. FITZSIMMONS,
*Secretary.*

JUNE 23, 1977.

[FR Doc.77-18642 Filed 6-29-77;8:45 am]

federal register

THURSDAY, JUNE 30, 1977

PART VII

# DEPARTMENT OF TRANSPORTATION

## National Highway Traffic Safety Administration

■

# PASSENGER AUTOMOBILE AVERAGE FUEL ECONOMY STANDARDS

**Final Rule**

## Title 49—Transportation

### CHAPTER V—NATIONAL HIGHWAY TRAFFIC SAFETY ADMINISTRATION, DEPARTMENT OF TRANSPORTATION

[Docket No. FE 76-1; Notice 5]

### PART 531—PASSENGER AUTOMOBILE AVERAGE FUEL ECONOMY STANDARDS

#### Final Rule

AGENCY: National Highway Traffic Safety Administration, Department of Transportation.

ACTION: Final rule.

SUMMARY: This notice establishes average fuel economy standards for passenger automobiles manufactured in model years 1981-84. These standards are 22 miles per gallon (mpg) for passenger automobiles produced in model year 1981, 24 mpg for 1982, 26 mpg for 1983, and 27 mpg for 1984. These standards are promulgated to satisfy the requirements of section 502(a)(3) of the Motor Vehicle Information and Cost Savings Act, as amended. The establishment of these standards is intended to result in the consumption of approximately 41 billion fewer gallons of gasoline (worth $19 billion, with gasoline valued at 65¢ per gallon) over the life of the vehicles manufactured in 1981-84 than would be the case if the average fuel economy of new passenger automobiles remained at the level of the 1980 fuel economy standard, 20.0 mpg.

DATES: These standards will apply to the model years 1981 through 1984.

FOR FURTHER INFORMATION CONTACT:

Mr. Stanley R. Scheiner, National Highway Traffic Safety Administration, Department of Transportation, 400 7th Street, SW., Washington, D.C. 20590. (202-472-5906)

SUPPLEMENTARY INFORMATION:

#### I. Background Information

Title V of the Motor Vehicle Information and Cost Savings Act, as amended (hereafter, "the Act"), establishes average fuel economy standards applicable to manufacturers of passenger automobiles. Title V was added to the Act by Part A of Title III of the Energy Policy and Conservation Act (hereafter, "the Energy Act"). The term "passenger automobiles" generally includes four-wheeled vehicles manufactured primarily for on-road use and for the transportation of ten or fewer passengers, e.g., sedans, coupes, and station wagons. See 15 U.S.C. 2001 (1) and (2), and 41 FR 55368, December 20, 1976. Compliance of a manufacturer with these standards is to be determined by computing the production-weighted fuel economy average of the various model types of passenger automobiles manufactured by the manufacturer in a model year and comparing that number to the fuel economy standard. Fuel economy values for the various model types of passenger automobiles are determined in accordance with procedures established by the Environmental Protection Agency. See 41 FR 38675, September 10, 1976. The Act specifies fuel economy standards of 18, 19, and 20 mpg for model years 1978, 1979, and 1980, respectively, and 27.5 mpg for 1985 and thereafter. Fuel economy standards for model years 1981-84 are to be established administratively by the Secretary of Transportation not later than July 1, 1977. See section 502(a)(3) of the Act. This notice establishes the latter standards.

Section 502(a)(3) imposes two substantive requirements for the 1981-84 standards. That section requires that the standards for each of those model years be set at a level which (1) is the maximum feasible average fuel economy level and (2) will result in steady progress toward meeting the 1985 standard. The statutorily-established standard for 1985 and thereafter of 27.5 mpg may be adjusted either upward or downward by the Secretary of Transportation if he determines that the present standard does not reflect the maximum feasible average fuel economy level for those years. If the Secretary amends the standard for any model year to a level above 27.5 mpg or below 26.0 mpg, that amendment is subject to a veto by either House of the Congress. See section 502(a)(4). In determining maximum feasible average fuel economy, the Secretary must, under section 502(e) of the Act, consider four factors: technological feasibility, economic practicability; the effect of other Federal motor vehicle standards on fuel economy; and the need of the nation to conserve energy.

Responsibility for the automotive fuel economy program was delegated by the Secretary of Transportation to the Administrator of the National Highway Traffic Safety Administration (NHTSA) in 41 FR 25015, June 22, 1976. Rulemaking under section 502(a)(3) was initiated on September 23, 1976, when the NHTSA published an advance notice of proposed rulemaking (ANPRM). See 41 FR 41713. The ANPRM solicited specific information on all subjects relevant to the establishment of 1981-84 standards, with particular emphasis on the four considerations relating to the determination of maximum feasible average fuel economy levels set forth above. Six automobile manufacturers, two industry trade associations, one state and one federal energy agency, and one private individual provided responses to the ANPRM. These responses were considered in developing the notice of proposed rulemaking and supporting materials discussed below. To encourage the representation in the proceeding of interests and points of view which have traditionally been underrepresented due to the high costs of participation, NHTSA invited applications for financial assistance from individuals and groups which were financially unable to participate. See 42 FR 5178, January 27, 1977. Five public interest organizations received funding in this first action under the Department's demonstration program for financial assistance, which was announced in 42 FR 2864, January 13, 1977.

On February 22, 1977, a notice of proposed rulemaking and public hearing (NPRM) was published in 42 FR 10321. This notice discussed in additional detail the issues which were deemed relevant to the establishment of 1981-84 standards. The notice also announced the availability of a document titled "Data and Analysis for 1981-84 Passenger Automobile Fuel Economy Standards" (hereafter, the "Support Document"), which set forth the methodology and data on which fuel economy improvement projection would be based. This document was released on March 1, 1977. As noted in the NPRM, the Support Document projected potentially achievable fuel economy levels which would result in steady progress toward meeting 27.5 mpg by 1985. These projections were based on the use of a limited class of technological improvements, and were therefore not projections of "maximum feasible average fuel economy levels." See 42 FR 10322, and Tr-I, p. 87 (remarks of Dr. Robert Sawyer).[1] However, such projections were useful for demonstrating that average fuel economy levels in the range to be considered in this proceeding were achievable.

The NPRM also announced a public hearing to commence on March 22, 1977, to permit interested parties to make oral presentations in addition to their opportunity to make written submissions. The hearing was not required by the Act, but was held at the discretion of the Secretary to augment the opportunity for public participation in this important informal rulemaking action. The Secretary of Transportation presided over the first day of the hearing, together with the Administrator of the Federal Energy Administration and the Deputy Administrator of the Environmental Protection Agency. Representatives of the latter agencies also participated throughout the remainder of the hearing. Eleven companies, groups and individuals made presentations at the hearing, including five passenger automobile companies and four funded public interest groups. The NPRM established a deadline of April 7, 1977, for the submission of written comments on the NPRM and the Support Document and on issues raised at the hearing. This deadline was extended on April 1, 1977, to April 12, 1977, at the request of Chrysler Corporation[2], to al-

[1] The abbreviation "Tr" refers to the transcript of the fuel economy public hearing, copies of which are in the fuel enonomy docket. The roman numeral following the abbreviation refers to the transcript volume, "I" being the Tuesday, March 22 volume, "II" being the March 23 volume, and "III" being the March 24 volume. References to the transcript and other materials are intended as an aid to persons dealing with the voluminous materials in this rulemaking, and may not be exhaustive.

[2] DN-25. The abbreviation "DN" followed by a number refers to the docket number of material in NHTSA docket FE 76-01-NO3. This docket is located in Room 5108 of the Nassif Building, 400 Seventh Street, SW., Washington, D.C. and is open to the public during normal business hours.

low additional time for the preparation of responses to questions for which the hearing panel received no answer at the hearing. See 42 FR 18413, April 7, 1977. To assure fully responsive answers to certain important questions asked at the public hearing, "special orders" were issued on April 1, 1977, under section 505(b)(1) of the Act to the five automobile companies which participated in the hearing. DN-7. In addition, on April 21, similar special orders were issued to certain foreign passenger automobile manufacturers to obtain information on their capabilities to achieve high levels of average fuel economy. DN-28. On April 20, special orders were sent to five automobile equipment and material suppliers to obtain information on the fuel economy improvement potential and cost associated with the equipment and material they could supply to passenger automobile manufacturers in the 1981-84 period. DN-27. An additional special order was issued on May 19 to the recipients of the April 1 order to obtain further information on the impact of the Administration's proposed emission standards and energy plan on fuel economy. DN-35. All comments and responses have been considered and the most significant are discussed below.

Material contained in the Support Document, as supplemented or revised in light of material submitted in response to the NPRM and special orders, together with other relevant material, were used in the development of the standards promulgated herein. More detailed information including more extensive data and analyses used in the development of these standards is contained in a Rulemaking Support Paper (hereafter, the "RSP"), copies of which will soon be available from the Office of Automotive Fuel Economy (NFE-01), National Highway Traffic Safety Administration, 400 Seventh Street SW., Washington, D.C. 20590 or by calling 202-472-5906. The data and analyses in that paper appear to justify average fuel economy standards more stringent than 27.5 mpg by 1985. However, the scope of notice limits this final rule to standards for 1981-84. Thus, the statutory standard of 27.5 mpg for 1985 and thereafter cannot be changed by this rulemaking. Further, standards of 27.5 mpg or higher cannot be set for any year before 1985 so long as the 1985 standard remains at 27.5 mpg. This second limitation results from the statutory requirement that the 1981-84 standards lead to steady progress toward the 1985 standard.

It should be noted that these limitations on the 1981-85 standards are only temporary. Shortly, the Department intends to exercise its authority under section 502(a)(4) of the Act to initiate rulemaking to increase the average fuel economy standards for 1985 and thereafter. At that time, the relation between the new standard for 1985 and the standards for 1981-84 established herein will be considered. A further discussion of this topic is contained in section XII below.

## II. Methodology on Which Standards Are Based

A. *The methodological approach.* In view of the statutory requirement for maximum feasible standards and of the nation's need to conserve energy, the Department has attempted to set fuel economy standards at the most stringent possible level, consistent with other statutory requirements. At least two approaches exist for determining such maximum levels. One approach is to evaluate the most fuel efficient passenger automobiles produced today in each of the various market classes of automobiles, and to use that evaluation to set improvement targets for all other automobiles in the same class. This approach has the advantage of providing a clear basis for evaluating current technological capabilities. However, to the extent that the best of the present vehicles, or even existing prototype vehicles, do not employ all available fuel economy-improving technology, this approach does not truly measure even current maximum capabilities. Further, it does not consider technological improvements that will occur in time to be incorporated in the 1981-84 passenger automobiles. Therefore, in developing 1981-84 fuel economy standards, the Department has employed a different approach. The adopted methodology looks at present passenger automobiles and projects the impact of applying current and expected future technology to those vehicles. This approach has the disadvantage that no one has actually built or tested a vehicle that combines the technological attributes of the vehicles postulated in the analysis. However, the Department is convinced that the individual technological improvements considered in this analysis have been sufficiently well demonstrated through engineering analysis and other means that the combined fuel economy projections provide a reliable estimate of the achievable fuel economy of future passenger automobiles.

The Department's analysis started with the detailed schedules for downsizing, weight reduction through materials substitution and matching of engines with vehicles by the four major domestic manufacturers, as contained in the Support Document. Then the schedules for inertia weight reduction over the period 1981-85 were revised to reflect further information. The projected fuel economy results for each manufacturer for each year were then revised to reflect the new weight estimates as well as the Department's assessment that an average 10 percent reduction in acceleration performance could be achieved by the 1981 model year to increase fuel economy by an additional 4 percent.

Next, the percentage increases in fuel economy due to technological improvements in transmissions, aerodynamic drag, rolling resistance, engine and vehicle accessories, and lubricants were evaluated and these technological improvements were projected to be phased-in to the 1981-1985 vehicles at various rates for each manufacturer. The phase-in schedules took into account differences in capability for implementation among the manufacturers.

The technologies and the associated increases in fuel economy are:

| | Percent |
|---|---|
| Improved automatic transmission | 10 |
| Improved manual transmission | 5 |
| Improved lubricants | 2 |
| Reduced accessory loads | 2 |
| Reduced aerodynamic drag | 4 |
| Reduced rolling resistance | 3 |

In addition, the assessment included a 1 percent fuel economy penalty due to safety standards necessary to assure adequate levels of crash survivability in the automobile fleet of the 1980's. See RSP.

Finally, the distribution of car sizes for each manufacturer was assumed to be approximately the same as in 1976.

The diesel engine was also considered in the assessment. It is available to manufacturers as an alternative way to obtain increased fuel economy and the Department concludes that manufacturers potentially could achieve a 25 percent penetration of diesel engine powered passenger automobiles by 1985. Similarly, the Department considered a shift in size distribution to 10 percent large cars, 25 percent midsize, 25 percent compact, and 40 percent subcompact by 1985 as a way to obtain a further increase in fuel economy. Diesel engines and mix shifts were placed in a "safety margin" category of technologically feasible means for the purposes of this rulemaking.

The economic practicability of the specific technical approach to improving fuel economy was examined in depth. The assessment considered the cost to the manufacturer of the needed capital facilities and the variable costs associated with the various technological improvements in fuel economy. It projected price increases based on those cost estimates. It examined the overall costs to the consumer due to changes in new car prices, improvements in fuel economy, and changes in maintenance costs over the life of the car. It considered the impacts of price and fuel economy changes upon new car sales. It examined in some depth the capability of the four domestic manufacturers to finance the capital facilities and equipment out of revenue.

This approach results in a demonstration of *one* feasible path for attainment of the fuel economy standards, which, however, is not necessarily the least cost or lowest risk path for each automobile manufacturer to adopt to achieve compliance. Since the fuel economy standards are "performance standards," manufacturers are free to select any alternative path for achieving compliance. Even if the Department had based its fuel economy projections on the use of all known technology, manufacturers would still have the flexibility in achieving compliance. In some cases, the Department's analysis makes an allowance for alternative technologies (e.g., downsizing or material substitution to achieve weight reduction) from which manufacturers may select. In addition, manufacturers may increase the percent of their production for which some methods are used and thereby generate flexibility to decrease the usage of some other method. The manufacturers may vary the intensity with which they apply a particular method, for example, achieving a greater or lesser reduction in weight or acceleration capability. Many of the achieveable improvements assumed in the analysis are based on projections of fuel economy improvement potential which the Department considers conservative. If improvements in fuel economy greater than those projected are in fact realized, more flexibility is obtained. Finally, any new technological developments over the intervening years would generate additional flexibility. For these reasons, it is clear that, even excluding the measures comprising the compliance safety margin provided in this analysis, alternate approaches to complying with fuel economy standards will be open to the automobile manufacturers.

B. *Statutory requirements.* Section 502 of the Act provides guidance regarding the analysis to be used in setting the 1981–84 fuel economy standards. The first required step is to determine the "maximum feasible average fuel economy level." The first consideration required under section 502(e) in determining that level is "technological feasibility." The Department interprets the latter phrase, in the context of the "maximum feasible" requirement and the methodological approach discussed above, as presenting the question of whether the various technological options for improving fuel economy are, individually and when used with other options, capable of commercial application in 1981–84. Therefore, the technology considered in the Department's assessment is not limited to that presently in production. If it can be reasonably projected that the technology will become available in time to be applied in a specified model year, its use is technologically feasible in that year. See generally "Chrysler Corp. v. Department of Transportation," 472 F. 2d 659 (6th Cir. 1972), at 671–3; "International Harvester v. Ruckelshaus," 478 F. 2d 615 (D.C. Cir. 1973), at 628–9. Although marketing strategies for encouraging the purchase of fuel efficient passenger automobiles are not items of technology, those strategies have been included in the "mix shift" portion of the discussion of the technology-based average fuel economy projections. Given the use of "maximum", the Act must be construed to require the Department to base its analysis on the use of all feasible methods for improving average fuel economy.

The NPRM, at 42 FR 10322, solicited comment on the second statutory consideration, "economic practicability." Ford Motor Company argued that this consideration, along with the technological feasibility consideration, requires the Department to reject any level of standards which would create even a risk of reductions in industry sales, employment or profits or of restrictions in the mix of automobiles offered for sale. DN-15, Document II, p. 2. Ford suggests basing the standards on a "risk-benefit" analysis. Chrysler Corporation argued that the term means as a minimum that "the various manufacturers are financially capable of taking the necessary steps to insure compliance." DN-30, p. 20. Chrysler goes on to state that the analysis should require a consideration of the impacts of the proposed standards on employment, inflation, and consumers. The Department's view on this issue is more consistent with that of Chrylser than with Ford's.

The dictionary meaning of the word "practicable" is that something is "capable of being put into practice, done or accomplished." Webster's Third New International Dictionary 1780 (1961), 8 Oxford English Dictionary p. 1218 (1970). "Economic practicability" is nowhere defined in the Act. However, similar terms, "economically justified" and "economically feasible," are used in Part B of Title III of the Energy Act, and it is possible to infer the meaning of "economic practicability" from the use of those terms. The word "practicable" is synonymous with "feasible," according to the Oxford definition. This appears to be consistent with the way the term is used in the Act.

Section 325(a)(4)(D) defines "economically justified":

> * * * improvement of energy efficiency is economically justified if it is economically feasible the benefits of reduced energy consumption, and the savings in operating costs throughout the estimated average life of the covered product, outweigh—
>
> (i) Any increase to purchasers in initial charges for, or maintenance expenses of, the covered product which is likely to result from the imposition of the standard.
>
> (ii) Any lessening of the utility or the performance of the covered product, and
>
> (iii) Any negative effects on competition.

It should be noted that "economically feasible the benefits of" is a grammatical error which appears in the Energy Act itself as well as the Conference Report. The legislative history indicates that it should probably be read "economically feasible and if the benefits of."

Section 325 clearly contemplates that a standard must be both economically feasible and justified on a cost-benefit basis. Since Congress used the two concepts separately, it obviously did not intend them to be synonymous, i.e., economically feasible is not the same as cost-beneficial. This is further made clear by the definition of feasibility in the Conference Report:

> The term feasibility is used in section 325 in the strict sense, namely "capable of being carried out". Economic feasibility refers to whether or not a manufacturer has the economic capability to carry out the requirements of an energy efficiency standard. S. Rep. No. 94-516, H.R. Rep. No. 94-700 (94th Cong., 1st Sess.) at 172.

In the dictionary definitions listed above, "feasible" was listed as a synonym for "practicable", and interchanging them would lead to the conclusion that economic practicability is a separate concept from cost-beneficial (the second element of economically justifiable).

In addition, not equating cost-benefit considerations with economic practicability is consistent with the goal of achieving maximum feasible fuel economy by allowing economically and technologically possible standards which will improve fuel economy but which an analysis, subject to many practical limitations, might indicate are not cost-beneficial.

The word "practicable" appears in the other major vehicle regulatory statute that NHTSA administers, the National Traffic nd Motor Vehicle Safety Act. Section 103(a) of the Vehicle Safety Act (15 U.S.C. § 1392(a)) states, in part:

> * * * The Secretary shall establish by order appropriate Federal motor vehicle safety standards. Each such Federal motor vehicle safety standard shall be practicable * * *

Unfortunately, the term is defined neither in the Vehicle Safety Act nor its legislative history. However, the legislative history of the Vehicle Safety Act states that the determination of practicability must include consideration of technological and economic factors. Further, there is a small body of judicial interpretations of the term which outlines its contours.

First, it is clear that the term does not mean cost-beneficial. In *Chrysler Corp. v. Department of Transportation*, 472 F. 2d 659 (6th Cir. 1972), the court noted that the Automobile Manufacturers Association had suggested a number of amendments to the bill from which the Vehicle Safety Act arose, including limiting standards to those at costs commensurate with the benefits to be achieved. Id. at 672, fn. 16. and stated:

> None of these specific restraints sought by the Automobile Manufacturers Association was adopted, and we must decline to write into the Act the very same suggestions which Congress declined to write into the Act. Id. at 672, fn. 16.

Considering the definition of "economically justifiable" that Congress placed in Part B but not Part A of Title III of the Energy Act, the Department must likewise decline any invitation to write such limitation into Part A.

What "practicability" does mean is suggested in the following cases. In *Chrysler Corp. v. Department of Transportation*, 515 F. 2d 1053 (6th Cir. 1975), relating to rectangular headlamps, the court stated:

> A review of the cases in this area suggests the practicability requirement was designed primarily to prevent the NHTSA from establishing mandatory safety standards that are economically or technologically infeasible. (citations omitted). Id. at 1060.

In *Chrysler Corporation v. Department of Transportation*, 472 F. 2d 659 (6th Cir. 1972), relating to passive restraints the court stated:

> We do not intend to suggest that the Agency might impose standards so demanding as to require a manufacturer to perform the impossible, or impose standards so imperative as to put a manufacturer out of business. But

it is clear from the Act and its legislative history that the Agency may issue standards requiring future levels of motor vehicle performance which the manufacturers could not meet unless they devoted more of their resources to producing additional safety technology than they might otherwise do.

Id. at 672. It should be noted that this explicitly recognizes the Department's authority to set standards at non-free market dictated levels, i.e., at levels not fully cost justified under traditional free market economic theory.

Finally, in *H & H Tire Co.* v. *U.S. Department of Transportation*, 471 F. 2d 350 (7th Cir. 1972) the Court said:

We agree with the Government that "the fact that a government regulation may cause economic hardship to a party does not make such regulation unreasonable." Id. at 354.

Congress was presumably aware of the judicial interpretation of this term. It can be inferred from Congress' use of the same term in the Cost Savings Act as in the Vehicle Safety Act, both of which are overseen by the Commerce Committee and administered by the NHTSA, that Congress intended the same interpretation in both cases.

Considering all these factors, the Department concludes that "economic practicability" should be interpreted as requiring the standards to be within the financial capability of the industry, but not so stringent as to threaten substantial economic hardship for the industry. A cost-benefit analysis would be useful in considering these factors, but sole reliance on such an analysis would be contrary to the mandate of the Act.

The third consideration in determining "maximum feasible average fuel economy" levels is "the effect of other Federal motor vehicle standards on fuel economy." This term is interpreted to call for making a straight-forward adjustment to the fuel economy improvement projections to account for the impacts of other Federal standards, principally those in the areas of emission control, occupant safety, vehicle damageability, and vehicle noise. However, only the unavoidable consequences of compliance with these standards should be accounted for. The automobile manufacturers must be expected to adopt those feasible methods of achieving compliance with other Federal standards which minimize any adverse fuel economy effects of those standards.

The final statutory consideration is the "need of the Nation to conserve energy." The Support Document contains information on this topic, including a discussion of the impact of our national need to import large quantities of petroleum, and the impact of various automotive fuel economy standards schedules on such importation. No participant in the rulemaking proceeding disputed the importance of the need to conserve energy. The magnitude and prominence of this need have increased in the years since Congress' amendment of the Act. It must be recognized that achieving improvements in automobile fuel economy, no matter how great, will not by itself solve the national energy problem. Maximum conservation efforts must be made in all areas of energy consumption if the nation is to begin to solve its overall energy problem. It would jeopardize the overall national conservation effort if individual elements of that effort, such as the automobile fuel economy program, were to fail to require the last increments of feasible fuel savings on the sole ground that such increments are small in comparison to the overall need. Therefore, in considering various fuel economy schedules for 1981–84 passenger automobiles, the Department must select the highest schedule consistent with the other statutory requirements, due to the serious national need to conserve energy. See Federal Energy Administration submission, DN–37 pp. 1–2.

The second substantive statutory requirement for the 1981–84 standards is that they must result in "steady progress" toward meeting the 1985 standard. Although the Act does not define the term "steady progress," some guidance as to the term's meaning can be obtained by reference to the "plain meaning" of the two words, cases construing the two words, and the Act's legislative history. From a review of these materials, it appears that the term requires annual increases in average fuel economy, but with none of the annual increments varying dramatically from the other annual increases. Schedules like those suggested by American Motors Corporation (Tr–I, p. 74) and by Damiler-Benz AG, (DN–10, p. 11) which require increases in average fuel economy in only one year during the 1981–84 period, would be inconsistent with the "steady progress" requirement, even if they met the "maximum feasible" requirement, since they do not require annual progress. On the other hand, a projected maximum feasible average fuel economy level of 26 mpg for 1981 for example, would have to be adjusted downward because of the disproportionately large increment resulting for that year.

## III. Determination of Maximum Feasible Average Fuel Economy Levels

A. *Technology-based fuel economy projections*. Participants in the rulemaking proceeding did not seriously challenge the appropriateness of the basic methodological approach used in the Support Document (Docket Number FE 76–01 GR–3) to project fuel economy improvement potential. That methodology assigns an analytically-derived percent average fuel economy improvement to certain options which are technologically feasible and applies that percentage to each of the various manufacturers' present passenger automobile fleets. The same implementation schedule is not used for all manufacturers nor for all automobiles in a given manufacturer's fleet due to the significant differences which exist in the financial capability and in the efficiency of the current automobiles of the various manufacturers. Rather, a maximum appropriate improvement schedule taking those factors into consideration is assigned. The technology considered in the development of the standards established in this notice are discussed in detail below. Because of the qualitative difference in the domestic automobiles and the imports, the fuel economy improvement potential of the imports will be discussed separately.

1. *Weight reduction*. The most obvious method for improving fuel economy is to make the passenger automobile lighter. For analytical purposes, the Support Document divided this option into three sub-options: downsizing; material substitution; and mix shifts. "Downsizing" referred to the reduction of vehicle weight and exterior dimensions by optimizing the vehicle design. The goal of downsizing is to reduce the exterior dimensions of the automobile without reducing significantly the interior passenger and luggage volume of the automobile. According to General Motors, this option "retains the essential characteristics of cars that meet a variety of consumer needs and desires." DN–18, Attachment VIII, p. 3. The Department notes that there is significant variation in the interior space of different passenger automobiles with the same number of seating positions and that tradeoffs between interior space and improved fuel economy are possible. "Material substitution" refers to the substitution of materials with lighter weight for a given strength, such as aluminum, plastics, and high-strength steel, for currently used materials. "Mix shifts" refers to shifting the percentages of the vehicles sold in different market classes (e.g., selling more compacts and fewer midsize automobiles). For explanation of these market classes, see the fuel economy labeling regulations established by E.P.A. in 41 FR 49753 (November 10, 1976). The automobile manufacturers generally argued that they were unable to differentiate between weight savings attributable to downsizing and material substitution, since they are both inseparable parts of the vehicle redesign process. See GM comment, DN–18, p. 11; Chrysler comment, DN–32, p. 11. Therefore, the Rulemaking Support Paper has combined the weight reduction potentials for those two methods. Mix shifts will be dealt with separately in section III.A.10.

The Support Document based its projections of feasible weight reduction through downsizing primarily on the reductions already achieved by General Motors with its large-sized vehicles and on press reports of planned downsizing of the other market classes. See Support Document 2, Volume I, page 2–7. Since these projections were based on current downsizing efforts, they may well understate the maximum potential for downsizing in 1981–84. See DN–11, p. 4, comments of Mr. Thomas Austin. In fact, Ford, in response to the April 1 special order (DN–7) projected greater total weight reduction for its fleet than NHTSA had originally assumed. DN–15, Doc. III, p. 30. GM strongly implied that a second round of downsizing, in addition to the one now underway, was both feasible and planned. DN-18, Att. VIII, p. 3. In addition, GM submitted a "hypothetical scenario" of actions it could take to meet a standard of 27.5 mpg in 1985. DN-18, p. 12. Although GM characterizes this scenario as "drastic," the company's main concern appears to be that the scenario assumes the use of diesel engines in 25% of its automobiles and a reduction in average acceleration capability. The projected weight reductions, which are significantly greater than those initially projected by NHTSA, do not appear "drastic," and are generally consistent with Ford's projections. The reasonableness of GM's projections can also be inferred from GM's statement that the reduction assumed no mix shift toward smaller market classes (p. 12) and the fact that its projected average inertia weight for 1984 subcompacts (p. 13) is substantially higher (2690 pounds) than that of many subcompacts built today.

Additional evidence that the Support Document's projections of achievable weight reductions were unduly pessimistic was provided by Alcoa and U.S. Steel Corporation in response to the April 20 special order. See DN-27. Alcoa projected that the use of aluminum in certain vehicle components where that use is expected to be feasible by 1982 could reduce the weight of a present compact car by 415 pounds. Alcoa emphasized that that total was not based on a complete list of all feasible aluminum substitutions and that no allowance was made for propagation effects, i.e., the ability to reduce the weight of certain additional components because of weight reductions achieved in other components. DN-27-D.

Alcoa projected a material cost increase of only $33 for its proposed aluminum substitution. U.S. Steel projected a slightly greater weight reduction, at a higher cost, through the substitution of certain steel products for those presently used. DN-27-A. These projected weight reductions, which do not refer to identical lists of vehicle components, are approximately twice as great as those projected in the Support Document, Doc. 2, Vol. I, page 2-7, of 150-250 pounds. Since the Alcoa and U.S. Steel projections were not available at the time of the NPRM, the Department is reluctant at this time to revise upward its projections in this rulemaking of weight-saving potential on the basis of those submissions. However, these submissions do support the feasibility of the original weight reduction projections.

Front engine, front wheel drive power trains offer another technological option for further downsizing of passenger automobiles. GM (DN-18, p. 10) and Chrysler (DN-19, p. 7) each projected use of such power trains in their fleets in 1981-84. Their use allows additional vehicle downsizing through maximizing passenger compartment volume by elimination of the driveline tunnel and rear axle kick-up area. It may also be possible to reduce the length of the engine compartment by transverse mounting of the engine and transmission. The only projection given for fuel economy improvements associated with front wheel drive was the 5 percent figure offered by Dr. Sawyer at the hearing. Tr-III, p. 93. Although no percent improvement is assigned to front-wheel drive for the purposes of this analysis, the use of such power trains is recognized as a feasible method for optimizing vehicle design. The availability of this option, which was not part of the original DOT analysis, tends to confirm the Department's conclusion that the weight reductions projected in the Support Document are conservative estimates of the maximum feasible reductions. There appears to be no technological reason which would prohibit the use of such power trains in all vehicles, particularly if the implementation of this option were phased in concurrently with transmission changes. (See sections 3 and 4).

Therefore, the weight reductions assumed for Ford and GM have been revised to take into account the higher projections made by those companies, but not the submissions by Alcoa and U.S. Steel. In the case of AMC and Chrysler, the original projections in the Support Document have been retained, despite the claims of those two manufacturers that the Department's projections exceed their plans.[3] AMC argues that its vehicles are presently optimally designed, and that the other manufacturers' downsizing plans will merely bring the latter automobiles up to AMC's level of efficiency. DN-14, p. 1. Chrysler argues that DOT projections are 100-200 pounds too optimistic per vehicle. DN-30, p. 9. With respect to both AMC and Chrysler, there is no reason to believe that the improvements associated with material substitution are not as fully applicable to them as to Ford and GM, which did not dispute the projected improvements. Neither AMC nor Chrysler gave any indication that they presently use light-weight materials to a greater extent than their domestic competitors, and a comparison of the weights of their present vehicles confirms that there is no such difference. AMC's claim that absolutely no downsizing of its vehicles is possible must also be rejected. For example, the AMC Gremlin has less interior room than a Honda Accord, but weighs nearly 800 pounds more. See 1977 EPA/FEA Gas Mileage Guide, Second Edition, and Automotive News, 1977 Market Data Book Issue, April 27, 1977, pp. 76, 109. The AMC Hornet weighs nearly 500 pounds more than an Audi 100LS, but has less interior room. The AMC Pacer weighs nearly 600 pounds more than that same Audi model, with equivalent interior roominess. The AMC Matador weighs 168 pounds more than a large size Pontiac, based on a comparison of six-cylinder versions of both cars, but has eight less cubic feet of total interior volume. A similar comparison between present Chrysler and Ford automobiles reveals no significant differences in weight or roominess, yet Ford projects that it will achieve a significantly lower fleet average weight than Chrysler. It is significant that Chrysler engineers have projected that weight reductions of 630 pounds could be achieved through light-weight material substitution alone in a mid-size car, with "moderate changes in design and manufacturing techniques." SAE Paper # 760203, Docket FE-76-01-GR-21.[4] Those engineers project that such weight reduction techniques could be implemented in "two to three years," with a resulting fuel economy improvement of 26 percent. Therefore, the original assessments of weight reduction potential for AMC and Chrysler have been retained. The originally adopted schedule for attaining those reductions allows more time for those two companies to complete the process than in the cases of Ford and GM, in order to take into account differences in economic and product development capabilities (see Support Document, Doc. 4.). These delays provide needed flexibility for the smaller domestic manufacturers without significantly reducing total fuel savings. Table 5.1 of the RSP provides the projected fleet average inertia weights for each manufacturer and the resulting fuel economy values appear in Table 5.9.

2. *Reduction in straight-line acceleration capability*. Over a limited range of engine parameters, it is possible to achieve fuel economy improvements through reducing engine displacement or the ratio of engine speed to vehicle speed (N/V), or some combination of those two items. These reductions, while improving fuel economy, also adversely affect vehicle acceleration capability. Where it is possible to merely substitute one set of gears for another to change the axle ratio or expand the ratio of transmission gearing or where sufficient plant flexibility exists for a manufacturer to increase the production of lower displacement engines, this method of improving fuel economy can be implemented in a highly economical manner. The primary constraint which restricts the use of this method is consumer resistance, at least initially, to significantly reduced levels of vehicle acceleration. A secondary constraint is the increased difficulty of controlling NOx emissions as engine loading increases.

Therefore, in the April 1 special orders, the automobile manufacturers were required to submit estimates of the minimum level of acceleration performance which consumers currently find acceptable. DN-7, Question I.B.2. The respons-

[3] Many of the automobile manufacturers' specific objections to the percent improvements projected by the Department for various technological options are phrased in terms of differences between DOT projections and the manufacturer's present "plan." It is clear, however, that under the statute DOT's projections must be based on maximum achievable improvements, notwithstanding any contrary "plans" by the manufacturer.

[4] "SAE Papers" are technical research papers presented before the Society of Automotive Engineers. The papers cited in this notice were prepared by engineers and scientists expert in particular areas of automotive technology.

es to this question were relatively consistent. In terms of the time required for vehicles to accelerate from rest to a speed of 60 miles per hour, GM indicated that vehicles which require more than 15 seconds are "currently meeting with unfavorable consumer acceptance," (DN-18, p. 5); Ford judged the same time to be the "minimum performance acceptable without encountering consumer resistance." (DN-15, p. 11); Chrysler estimated a "threshold level" at about 17 seconds, (DN-32, p. 8); and AMC states that times in excess of 20 seconds are "clearly unacceptable" (DN-14, p. 4). However, the specified "thresholds" do not appear to be absolute minima, even at present, which all passenger automobiles must exceed. GM states that 16 percent of its present fleet of passenger automobiles presently have acceleration times poorer than its specified minimum (id., p. 5), Ford states that nearly 26 percent of its fleet is in that class (DN-43, Att. I), and AMC states that 26 percent of its sales are presently near the 20 second threshold (id., p. 4). Eight percent Chrysler's domestic fleet has acceleration times poorer than 17 seconds. DN-32-A. Large portions of all manufacturers' current import fleets have acceleration performance levels poorer than these "thresholds."

In view of these statements, it is concluded that a reduction in average passenger automobile acceleration of approximately 10 percent from the present average baseline acceleration times of approximately 14 seconds can be achieved without incurring substantial consumer resistance. This reduction roughly corresponds to a fleet average "zero-to-sixty" time of 15.4 seconds, and would be phased-in by the 1981 model year. A fuel economy benefit of four percent would result from this change.

It should be noted that several factors combine to mitigate the impact of even this relatively modest reduction. First, it is possible for the manufacturers to achieve this reduction by narrowing the range of offered acceleration characteristics, e.g., by decreasing the acceleration time for its faster automobiles. Even under the GM "Hypothetical Scenario," which assumed a greater performance reduction than the one projected here, the reduction in average acceleration performance is achieved while concurrently improving the performance of the slowest of GM's present passenger automobiles. DN-18, p. 17. In addition, it may be possible for the manufacturers to offset this performance reduction in their passenger automobiles. At the same time that a manufacturer switches from an 8-cylinder engine to a 6-cylinder engine or lowers the N/V ratio, it could increase the acceleration performance of whatever engine is used by using a turbocharger or fuel injection system. The use of this alternate technology may even result in a net fuel economy benefit, in some cases. DN-16, p. 1 (Volkswagen) and DN-27B, p. 2 and Attachment (Bendix). Fuel injection is presently used on a number of passenger automobiles, and at least one manufacturer plans to use turbochargers in the near future. DN-18, p. 9 (GM). Volkswagen, under DOT contract, tested a turbocharged version of the Diesel Rabbit and achieved a fuel economy improvement of up to 18 percent with a concurrent improvement in acceleration performance. The acceleration level of this vehicle is superior to that of approximately 24 percent of General Motors' present passenger automobiles. DN-16, p. 2 (VW) and DN-18, p. 6 (GM). The fuel economy benefit from turbocharging is an indirect one which would typically result from the ability to substitute a smaller displacement engine for the larger one currently used and increasing the smaller engine's horsepower while maintaining its better fuel economy by turbocharging. Therefore, the performance reduction discussed above is adopted in the analysis on which the 1981-84 standards is based. See Rulemaking Support Paper, Section 5.3, for a further discussion of this topic.

3. *Improved automatic transmissions.* The Support Document projected that improvements in automatic transmissions could result in a 10 percent fuel economy improvement in vehicles which use automatic transmissions, or about 85 percent of the domestic fleet. This improvement was based on tests of prototype transmissions under contract for DOT, and several studies presented in papers submitted to the Society of Automotive Engineers. Id. Document 2, Vol. 1. These data indicate that improvements up to nearly 20 percent are achieveable with certain types of improved automatic transmissions. Present automatic transmissions are generally three-speed units with a conventional torque converter. Some data generated by the domestic manufacturers indicate that certain modified versions of the present three-speed transmissions, principally those employing a lock-up clutch on the torque converter in conjunction with a wide gear ratio range, have the potential to achieve the assumed 10 percent improvement. In addition, a four-speed, wide ratio range automatic transmission has the potential to achieve even greater fuel economy improvements, but at significantly higher costs. Ford, GM, and Chrysler each projected fuel economy improvements achieveable through the use of one or more of the above types of automatic transmission of a magnitude either consistent with or very close to the assumed 10 percent figure projected in the Support Document. DN-15, Doc. I, p. 3; DN-18, p. 3; DN-30, p. 11. Volvo also supported the 10 percent improvement projection. DN-28-02, p. 5. Even if the higher cost four-speed unit is necessary to achieve this improvement, none of the four domestic manufacturers claimed that the use of such units is economically impracticable, in response to a specific question in the April 1 special order. DN-7, Questions IIA and B. Indeed, Ford has begun plant modifications to permit the production of a four speed automatic transmission with lock-up torque converter in time for installation in some 1980 model year automobiles. Docket FE-76-01-GR-23. Therefore, the original 10 percent improvement is retained in the final analysis.

GM argued that the 10 percent improvement in automatic transmissions is not applicable to all automobiles which use automatic transmissions. DN-19, p. 3. Lightweight vehicles "with small displacement engines, small automatic transmissions and high axle ratios" are projected to attain a significant share of the market and, according to GM, the fuel economy of such vehicles is not significantly improved by the addition of a lock-up clutch. Id., p. 4. NHTSA cannot accept this argument for several reasons. First, GM addressed itself primarily to the impact of the lock-up clutch, without addressing the impact of increasing the number of geared speeds, which, as was previously noted, is considered both technologically feasible and economically practicable, or of other transmission improvement techniques. Second, none of the other manufacturers raised a similar objection to the assumed across-the-board application, despite their even greater orientation toward smaller market class automobiles. Third, it should be noted that General Motors' engineers have projected fuel economy improvements up to nearly 20 percent, over a wide range of engine sizes and axle ratios. See SAE Paper No. 770418, Docket FE-76-01-GR-21. It may be that GM is implying that its future use of a (presumably new) small automatic transmission with high axle ratio would obviate the need to use a lock-up torque converter on its small cars. If this is true, then the projected 10 percent improvement figure for all automobiles which employ automatic transmissions is still correct, since the new drive train would achieve that improvement. GM is in no way constrained to achieve that improvement in precisely the same manner in which it is postulated in this analysis.

AMC stated that it could only achieve a 2 percent improvement in its automatic transmissions. DN-14, p. 1. However, AMC presently purchases its transmissions from Chrysler and is likely to continue to purchase such technology from outside sources in the future. Therefore, any transmission improvements achieved by the "Big Three" would become available to AMC, albeit on a delayed basis. Implementation delays similar to those assumed for Chrysler and AMC for weight reduction were also assumed for transmission improvements in this analysis. See RSP Tables 5.5-5.8.

4. *Improved manual transmissions.* Another possible area of fuel economy improvement is the use of additional drive gears in manual transmissions. Many domestic manual transmissions have only 3-speeds. Information received on this subject in response to the April 1 (DN-7) and April 21 (DN-28) special orders supports a projected fuel economy improvement of 5 percent for the manual transmission portion of the fleet. DN-18, p. 8 (GM); DN-28-02, p.

6 (Volvo); DN-28-03, p. 5 (Honda). Ford's submission supports the feasibility of this substitution for all present manual transmissions. DN-15, Doc. I, p. 11. No information was submitted which raised any doubts about the technological feasibility or economic practicability of this option. In fact, five-speed manual transmissions have currently achieved substantial market penetrations in the import fleet. Honda projects that the use of five-speed manual transmissions would result in a $50 per vehicle price increase (for those vehicles with manual transmissions). DN-28-03, p. 5. Therefore a 5 percent improvement for all manual transmission vehicles was adopted in the analysis. The percentage of vehicles which use manual transmissions was not projected to increase between the present and 1985, due to the difficulty encountered by certain manual transmission vehicles in attempting to meet more stringent emission standards. The use of manual transmissions with additional drive gears results in a small, but nevertheless significant, increase in average fuel economy.

5. *Improved lubricants and accessories.* Improvements in average fuel economy can also be obtained through the use of synthetic, lower viscosity, or extended viscosity range lubricants and through improvements in the efficiency of vehicle and engine accessories such as pumps, fans, and accessory drives. A total improvement of 4 percent was assigned to these options in the Support Document, 2 percent for each category. See Doc. 2, Vol. I, p. 2-19. Three domestic manufacturers which addressed this issue did not object to the 4 percent improvement projection. DN-18, p. 1 (GM); DN-15, Doc. I, p. 3 (Ford); DN-14, p. 1 (AMC). Improvements up to the assumed 4 percent for lubricant improvements alone have been documented. See SAE Papers 750376 (Docket FE-76-01-GR-21) and 750675 (Docket FE-76-01-GR-21). Therefore, the assumed 4 percent improvement is retained in this analysis.

6. *Reduction of aerodynamic drag and rolling resistance.* Further fuel economy improvements are achievable through reducing the automobile's aerodynamic drag and rolling resistance. The latter term refers to the use of improved radial and other advanced tires and reductions in the frictional losses of bearings and other similar drive line and chassis components. Aerodynamic drag and rolling resistance improvements could be achieved in two ways. The first way is to obtain credit for aerodynamic drag reductions already achieved, through the use of the optional EPA "coast-down" procedure for determining road load dynamometer settings in fuel economy tests. See 40 CFR 86.177-11(e)(2). If the optional procedure is not used, fuel economy test results will be based on current tabulated values of road load power which in certain cases may result in deleterious fuel economy effects. The second way results from future improvement in these two areas. Credit for future aerodynamic drag reductions must also be obtained through the use of the optional EPA procedure. Data indicates that improvements in the first category alone can be of substantial magnitude. See RSP, App. D, Ref. 18.

The automobile manufacturers expressed a major difference of opinion on the magnitude of achievable improvements in this area. GM indicated that improvements up to 4 percent for aerodynamic drag and 4 percent for rolling resistance were achievable. DN-18 p. 5, 10, and ANPRM submission, Docket Number FE 76-01-N01, No. 10, pp. 16a, 21-24. The other manufacturers indicated much lower improvement potential, although apparently not assigning a high research and development priority to these items. DN-14, pp. 4, 5 (AMC); DN-19, p. 3, DN-32, Att. II, (Chrysler); DN-15, Doc. I, p. 11 (Ford). As was frequently the case with the manufacturers' statements, the percent improvements given reflect present plans as opposed to maximum capabilities. Therefore, the Department conducted an investigation to determine which of the disparate projections most closley corresponded to the actual maximum feasible improvement. Available data indicates that improvements in the upper range of GM's projections are in fact feasible for the 1981-84 time period. Volkswagen, for example, has demonstrated how relatively minor changes to automobile exterior design can result in significant reductions in aerodynamic drag, even beyond the GM projections. SAE Paper No. 760185, Docket FE-76-01-GR-21. Methods for reducing aerodynamic drag are discussed further in Appendix D of the Rulemaking Support Paper.

In the case of rolling resistance, it appears that a 5 percent fuel economy improvement can be obtained by switching from bias tires to "first generation" radials, although much of the switching has already occurred. "Second generation" radials which will offer further improvements of 2 to 4 percent are now under development, with GM apparently being the leader in this area among the auto companies. Docket FE-76-01-GR-19, 20, 22. It should be noted that developments in this area will result from the automobile companies working together with the tire manufacturers, since the automobile companies generally do not manufacture their own tires. It is likely that major breakthroughs by one automobile manufacturer would soon become available to all manufacturers, since the tire company which produces the improved tire could market that tire freely. Additional rolling resistance reduction can be obtained through increasing tire inflation pressures while making appropriate changes in the vehicle suspension system. See Appendix D of the Rulemaking Support Paper for further information on reducing rolling resistance. It is concluded that the previously discussed improvements in each of these two areas are feasible in the 1981-84 time frame, on a gradual phase-in basis. See RSP, Tables 5.5-5.8.

7. *Use of alternative engines.* The present fleet of domestically manufactured passenger automobiles is powered exclusively by conventional homogeneous charge spark ignition gasoline engines. However, certain alternative engine types such as the diesel and such stratified charge concepts as the Honda CVCC and the Ford PROCO (programmed combustion) offer the potential for significantly better fuel efficiency than present engines. Many manufacturers plan to use some form of alternative engine in their domestic fleets in the near future, including General Motors with the diesel (DN-18, p. 32), Ford with the PROCO (DN-15, Doc. I, p. 2), and Chrysler with a form of prechamber engine (DN-35-01, Attachment B, p. 6), in addition to the Honda CVCC and Mercedes, VW, and Peugeot diesels aleady on the market. In the case of the diesel, the Support Document projected (Summary Report p. A39), and the domestic manufacturer most actively pursuing the development of diesel engines confirmed in its response to the April 1 special order, that the diesel offers 25 percent better fuel economy than a comparably performing conventional spark ignition engine. DN-18, p. 2 and Attachment V (GM); DN-7, Question I.A. In addition, Volvo supported the 25 percent figure. DN-28-02, p. 4. Ford indicates that the PROCO engine can be expected to provide an improvement in fuel economy of approximately 20 percent. DN-15, Doc. I, p. 3 and Tr-II, p. 38. Honda projects a fuel economy improvement differential of roughly 10 percent for its CVCC engine. DN-28-03, p. 11. This projection may be low. The fuel economy difference between its CVCC and non-CVCC versions of the Civic, as determined in EPA fuel economy tests is approximately 30 percent. The Support Document's projection of a 25 percent improvement in fuel economy for the diesel was based on a comparison of fuel economy differentials actually experienced by GM and VW with their recently certified diesel passenger automobiles.

A number of objections were raised by a variety of participants in the proceeding with respect to the Department's original projections of a market penetration for diesels in the passenger automobile fleet growing linearly from 5 percent in 1981 to 25 percent in 1985. The passenger automobile industry argued that the primary difficulties in achieving those substantial market penetrations involve questions about the marketability of diesels and the ability of diesel engines to meet stringent nitrogen oxides emission standards. Tr-II, P. 105, 126, (GM); DN-19, p. 1 (Chrysler). The marketability problem for diesels is attributed to their higher initial cost and current problems with exhaust smoke, engine noise, cold-starting, fuel availability, and odors. The nitrogen oxide problem results from the diesel's alleged inability to achieve nitrogen oxide standards as low as 1.0 gram-per-mile, the level specified in the Senate and House versions of the Clean Air Act amendments. On the other hand, representatives of some public interest groups argued that the most serious problem with the diesel engine is that it emits certain presently unregulated, but nevertheless dangerous, pollutants such as particulates and polynuclear aromatics (PNA) and that increased use of diesel engines should therefore be pursued with caution. DN-12, pp. 19-28 (Citizen's for Clean Air); Tr-I, p. 93 (Dr. Sawyer, for Environmental Defense Fund).

In order to obtain more information on the marketability of diesel engines, the Department, in the April 1 special order, required those passenger automobile manufacturers most actively pursuing the diesel option to submit copies of any surveys in their possession relating to the marketability of diesels in the United States. DN-7, question IV. A (GM) and question B (VW). These surveys tended to support the conclusion that a 20 to 25 percent market penetration is potentially achievable. DN-18, Att. IV. It appears that the initial orientation of present passenger automobile buyers toward diesels is improved significantly when potential buyers obtain more information about the diesel's characteristics. In addition, present consumer resistance to diesels is based on perceptions of those diesel vehicles presently on the road. GM reports that "(r) ecent developments have significantly improved some of the factors that have historically detracted from the market acceptance of diesel engines such as noise, odor, cold start time and reduced acceleration." DN-18, p. 2. See also DN-16, p. 1 (VW), with respect to the turbocharged diesel Rabbit. Further improvements in diesel performance can be anticipated as the use of diesels is expanded. Therefore, marketability of diesel engines does not at this time appear to be as serious a problem as the manufacturers have indicated, although questions of the precise extent of future market penetration remain.

Similarly, the nitrogen oxides emission problem does not appear to be beyond solution. Relatively little has been done in the area of research on control of diesel emissions because of their present low market penetration and their ability to meet present emission standards essentially without emission controls external to the combustion chamber. In small diesel passenger automobiles, such as the VW Rabbit, $NO_x$ levels either meeting or closely approaching a 1.0 gram-per-mile standard have been achieved without the use of such $NO_x$ control techniques as exhaust gas recirculation. Tr-III, p. 11. In larger automobiles, GM states that a level of 1.5 grams-per-mile of $NO_x$ is achievable with its 350 V-8 diesel. Tr-II, p. 127. Further, both the recently passed House and Senate amendments to the Clear Air Act provide for some type of $NO_x$ waiver for diesel engines. Ford states that its PROCO alternative has the capability to achieve the 1.0 $NO_x$ standard without encountering the unregulated pollutant problems to the same extent as diesels. Tr-II, pp. 36, 42. The Honda CVCC approach appears to offer significantly better emission control potential than the homogeneous charge engine, without associated unregulated pollutant problems. DN-28-03, Attachment, p. 100. Therefore, the Department has concluded that control of $NO_x$ emissions down to approximately 1.0 gram-per-mile will not present an insurmountable barrier to the increased use of alternative engines, although further development work may be required. See Tr-I, p. 93, (Dr. Sawyer).

The magnitudes of the problem presented by the unregulated pollutants emitted from the diesel and the PROCO and of the potential for reducing those emissions are presently unclear. The particulate emissions from diesels are of concern to EPA because of the potential significant contribution to air quality control regions' particulate problems. EPA is studying the total mass and other aspects of diesel particulates, but as yet no firm guidelines on allowable diesel particulate emissions have been set. Control of diesel particulates, if needed, is expected to be a formidable technical task. See Docket Number FE-76-01-GR-17.

For the reasons specified above, and particularly because the Department desires further information on health effects the Department has not included alternative engines in the analysis forming the basis for maximum feasible average fuel economy projections. The foregoing disposition of the "alternative engine" issue does not preclude the Department from including the use of such engines in projections of maximum feasible average fuel economy in a subsequent proceeding to amend the 1985 standard.

One final point with respect to future use of the diesel engine deserves further discussion. Up to the present, the use of diesel engines has generally been confined to luxury automobiles such as the Mercedes and Peugeot. Recently Volkswagen and General Motors have begun implementation of that engine by dieselizing an existing engine, rather than designing a completely new engine. In view of past applications of the diesel engine, it would not be surprising if the new dieselized versions of the VW and GM engines were marketed as luxury items at a high price mark-up, higher than that justified by the additional cost alone. If this were done, this fuel efficient technology might not get the fair market test which it deserves, because of the high price differential.

Volkswagen has not adopted this approach. Rather, it has offered its diesel engine as a $170 option in the Rabbit (Tr-III, p. 18), and all indications are that the diesel version is selling extremely well, both in the United States and in Europe. Persistent rumors have circulated that the General Motors diesel would be offered at an extremely high mark-up, of up to $1,000. Tr-II, p. 110. This would raise serious questions as to the adequacy of the market test which the GM diesel would receive, if those rumors are in fact true. See TR-II, p. 111 (GM). Despite the differences in size between the VW and GM engines, the Department would be hard pressed to understand such a large price difference between the two engines. See Support Document, Doc. 3, App. B.

8. *Improved spark ignition engines.* The Support Document projected that a fuel economy improvement on the order of 10 percent is achievable through improvements to the conventional spark ignition engine. The use of an integrated electronic control unit for spark advance, fuel metering, and exhaust gas recirculation, optimization of combustion chamber, intake system, and valve timing, and the use of knock sensing and fuel injection were identified as methods for achieving the improvement. See Support Document, Doc. 2, Vol. I, pp. 2-16, 3-7. The percent improvement attributable to each of those options was not specified, although it was stated that 2 percent of the total was assigned to fuel injection, with the remaining 8 percent divided among the others. Id., 3-7.

The Support Document also identifies other spark ignition engine improvements that could occur as a result of that Document's downsizing methodology. As vehicles were downsized, smaller engines were projected to be used in those vehicles, in order to maintain horsepower-to-weight ratios. However, in selecting among a manufacturer's existing engine line, it was anticipated that in those cases where a choice among existing engines was possible, the manufacturer would select the more efficient one and phase out the least efficient. This procedure would result in an improvement in average engine efficiency of 8 to 13 percent. See Support Document, Doc. 2, Vol. 1, p. 3-8.

The Support Document noted further that several of the technological changes to engines for fuel economy improvement might also be used to control engine exhaust emissions. The dual benefits of such engine and emission control technologies is explicitly recognized. It is necessary to avoid double counting of benefits, however, and since the automobile companies and the Environmental Protection Agency (EPA) have generally treated the electronic control unit as part of the emission control system, this analysis is revised accordingly to make it consistent. DN-18, p. 20 (GM); DN-15, Doc. I, p. 17 (Ford); "Analysis of Alternative Motor Vehicle Emission Standards," Docket FE 76-01-GR-17, App. A. Therefore, no separate fuel economy benefit was attributed to the use of electronic control units.

The 2 percent fuel economy improvement assigned to fuel injection was confirmed by Ford, and no participant in the proceeding suggested a lower number. Id., Doc. I, p. 17. Bendix, the major domestic manufacturer of these units, claimed a 15 percent fuel economy benefit, adjusting for comparable emission and horsepower levels. DN-27B, p. 2. Bendix projects the costs of the unit, including the previously discussed electronic control unit and sensors, to be less than $100, about $15 more than the advanced carburetor it would be likely to replace. Several model types now in production employ fuel injection. See 1977 EPA/FEA Gas Mileage Guide.

It appears likely that the precise improvement achievable through the use of the remaining engine improvement techniques will vary from manufacturer to manufacturer, depending on the efficiency of engines presently in use. AMC expressed "no disagreement" with the originally assigned improvement, which was 10 percent. DN-14, p. 1. Chrysler projected up to a 3 percent fuel economy improvement for redesigned cylinder heads, and a total of 7½ percent for engine control optimization. DN-30, 10, 44. Ford did not address the issue except for the impact of electronic control unit.

Therefore, it appears that a fuel economy improvement ranging from 2 to 10 percent, depending on the manufacturer, is achievable by improvements to spark ignition engine efficiency, even beyond that associated with the use of the best of present engines. In the case of the manufacturers with the most efficient engine lines, the 2 percent fuel injection benefit would be available, as a minimum, since present domestic automobiles use that technology only to a negligibly small extent. In the case of the manufacturers with the least efficient engines, even selecting the most efficient engines in their lines would not result in the application of optimally efficient engines. Further techniques would be available to those manufacturers to achieve up to the 10 percent improvement in fuel economy projected in the Support Document.

The Department's assessment of the fuel economy improvements due to improved engines in 1981-1984 is that the detailed matching of specific engines with vehicles in specific inertia weight classes as identified in the Support Document is valid, and that the various engine and emission control technologies discussed above can be used to maintain the fuel economy resulting from that matching process while emission standards are tightened. See Section III. C., however, for further discussion of the relation between fuel economy and emission standards.

A specific engine efficiency improvement device not included in the previous discussion is the variable displace ment engine. This concept involves the use of an electromechanical system which deactivates some of the engine's cylinders during those operating modes which require less power, such as idle, light acceleration, cruising and deceleration. Eaton Corporation, the developer of this technology, projects fuel economy improvements of 10 to 40 percent with its units, depending on the engine operating mode. Some fuel economy benefit would accrue during all operating modes except moderate to heavy acceleration. Ford, which is the automobile company most actively pursuing the implementation of this technology, cites fuel economy benefits to date of 3 to 7 percent on the EPA composite driving cycle. DN-15, Doc. 1, p. 17. It should be noted that this technology has been applied to certain prototype alternative engines, in addition to conventional engines. TR-II, p. 39.

9. *Building "captive imports" domestically*. Section 503 of the Act provides that for purposes of determining compliance with fuel economy standards, the fuel economy ratings of domestically manufactured automobiles may not be averaged after model year 1979 together with automobiles more than 25 percent of whose cost is attributable to value added outside the United States and Canada. Ford, GM, and Chrysler each have subcompact passenger automobiles which fall in the latter category. Thus, if those "captive import" passenger automobiles were manufactured in the United States in the future, they could be included in those manufacturers' averages, resulting in some increase in that average. All three manufacturers disclaimed having present plans to do this, but none claimed this to be infeasible. Therefore, this also presents a possible method for complying with the fuel economy standards, while concurrently increasing domestic employment.

Volkswagen has noted that this provision has the anomalous effect of discouraging a foreign manufacturer from building production facilities in the United States. While it was adopted to prevent an exportation of jobs, the provision, as applied to a foreign manufacturer, discourages the importation of jobs. Although this impact may well not have been intended by Congress, it follows directly from the statutory language and the Department is powerless to change the result administratively. However, Volkswagen, or any other foreign manufacturer, may manufacture automobiles in the United States as long as more than 25 percent of the value added content is foreign, and still average those vehicles together with their imported fleet.

10. *Mix shifts*. A significant fuel economy benefit can be achieved through the use of marketing strategies to increase the sales of smaller automobiles. In addition, some improvement can result from mix shifts even in the absence of any initiatives by the manufacturers, if increases in demand for the smaller market class automobiles can be projected. Such a trend is projected by Ford and Chrysler, relying in part on long-term trends toward the smaller market classes. TR-II, p. 270 (Chrysler) and DN-15, Doc. I, p. 11 (Ford). See also TR-I, p. 89 (Dr. Sawyer), DN-13, p. 4 (Environmental Defense Fund), and DN-21, Attachment (Public Interest Economics Foundation), the latter with respect to the issue of the feasibility of "forcing" mix shifts.

Ford argued that requiring the manufacturers to take actions to shift the mix of passenger automobiles away from that mix which would result from "free market" forces is beyond the Department's statutory authority. DN-15, Doc. IV, p. 3-8. The Department rejects this position as inconsistent with the "maximum feasible" requirements and the legislative history of the Act.

The legislative history of S. 1883, the Senate version of the fuel economy provisions, contains a clear indication of the Congressional intent with regard to the role of market forces and mix shifts in establishing the standards. In explaining the standards set in the bill, the Senate Commerce Committee stated:

> A DOT/EPA report estimated that up to a 63-percent improvement in new car fuel economy could be achieved by 1980. This 63-percent gain was based upon maximum technological improvement through 1980 (weight reduction, aerodynamic drag reduction, transmission improvement, engine resizing and optimization) and a moderate shift in sales mix to 35 percent large and intermediate cars, and 65 percent compact and subcompact cars. Such a shift is within the current capability of the auto industry. By calling for a 50-percent improvement, this legislation provides ample cushion for unforeseen contingencies.

S. Rep. No. 94-179 (94th Cong., 1st Sess.) at 10. The Committee thus seems to have implicitly accepted the necessity or propriety of requiring such a mix shift to achieve the standards it set. In selecting a 50 percent instead of 63 percent improvement, the Committee did not reject any particular identified means of improving fuel economy. It simply provided a cushion against all types of contingencies. One contingency would be the failure of the assumed mix to sell. Another would be the failure of technology to develop at the assumed pace or to yield the anticipated improvement. The Committee's acceptance of the shift is made even clearer a few pages later in the Report:

> Figures obtained from the Recreational Vehicle Industry Association indicate that there will be approximately 2 million travel trailers (homes-on-wheels) and 1.2 million camping trailers (fold-down types) in the hands of the American public in 1976. There are also 3.2 million families in the United States of 7 or more persons. If reasonable assumptions are made about yearly growth in the number of trailers, auto fleet turnover rates, etc., a conservative estimate of the towing and large family demand for big cars is something under 1 million per year over the next few years. Even if the most drastic sales mix shifts necessary to meet the 1980 goal occur, there will still be at least 1 million full size and luxury cars produced, clearly a sufficient number to meet the demand. Special problems could arise in the 1980's if the automakers insist on sticking solely to the internal combustion engine to meet the 1985 goal. However, diesel towing packages could be an answer to this problem, with no sacrifice in fuel economy. Also, light duty trucks, which are not subject to the 1980 or 1985 goals could meet a significant portion of towing demand.

Id. at 14. The Committee clearly anticipated shifts in both sales mix and the type of vehicles offered for given uses. The 1 million figure was apparently obtained by multiplying the 10 percent large car figure used in the mix shift assumed in the DOT/EPA report and 10 million, the total number of passenger automobiles sold annually in the mid-1970's.

The extent of the sales mix shift the Committee contemplated as being possibly required to meet the 27.5 mpg standard, and the means that would be necessary to achieve it, are apparent from the DOT/ETA report cited by the Committee. The potential 63 percent improvement was under "Scenario D", which required:

> Steady technological improvement through the 1980's * * *
> * * * with 1980 sales mix assumed at 10 percent large cars, 25 percent intermediates, 25 percent compact, and 40 percent subcompact.

Potential for Motor Vehicle Fuel Economy Improvements: Report to the Congress, U.S. Department of Transportation and the U.S. Environmental Protection Agency, October 24, 1974, at 66. The DOT/EPA report also states that:

* * * sales shift in Scenario D would probably not occur "voluntarily" because of market demands for larger cars, i.e., Scenario D would probably require more substantial government pressure on manufacturers and/or consumers than would be the case under Scenarios B and C.

Id. at 64, and that:

Shift in mix was limited to that possible given the availability of production facilities, but no limitations due to consumer demand were assumed. Some of the technological options considered require further development; however their implementation is deemed feasible by 1980. Technological options were screened for consumer acceptability prior to their inclusion, but once selected, eventual 100 percent application to the new car fleet was assumed.

Id. at 4. The Committee thus explicitly recognized that major shifts in sales mix could be required to meet the standards and implicitly recognized that these shifts might not result voluntarily but could require government pressure on the manufacturers and/or consumers. The only limit on the mix shift that was contemplated was that which was imposed by the availability of production facilities; consumer acceptance was considered only with respect to technological improvements.

The Senate Committee apparently realized that this process would not be without some risks. First, as stated above, it reduced its standard to require only a 50 percent increase, rather than a 63 percent increase, to provide "ample cushion for *unforeseen* contingencies." (emphasis added). Second, the bill itself contained provisions to protect the manufacturers from an "unanticipated retail sales mix" beyond the control of the manufacturer in section 508(b)(3):

"(3) The Secretary may waive or modify a civil penalty determined under subsection (a)(1) of this section if, and to the extent that the manufacturer involved demonstrates to the Secretary that its failure to comply with an applicable average fuel economy performance standard resulted from an unanticipated retail sales mix among different classes of automobiles or light duty trucks, as appropriate, manufactured by it and that such mix was beyond the control of the manufacturer: *Provided*, That the Secretary may not waive or modify any such penalty unless the manufacturer involved demonstrates to the Secretary that it included in its automobiles or light duty trucks, as appropriate, all of the improvements to increase fuel economy that were technologically feasible, and that it made a good faith effort to produce or stimulate a retail sales mix that would have resulted in compliance with the applicable standards, through advertising, pricing practices, availability of models, and any other means.

In other words, a manufacturer could be let off, but only if it had done everything it could to achieve the required product sales mix.

Finally, the bill provided some additional protection for the manufacturers by allowing for recoupment of penalties in the event of subsequent overachievement (section 508(c)) and for modification of the standards by the Secretary if new information indicated the standards could not be achieved (section 504(b)). It should be noted, however, that downward revision of the 1980 and 1985 standards would be subject to Congressional approval (section 504(b)(2)).

To summarize briefly, the Committee apparently recognized that a major sales mix shift away from current levels would be necessary to meet the standards, and that achieving this shift would require pressure from the government on the manufacturers and by the manufacturers on the consumers. It realized there were risks involved in this, and tried to reduce them first by setting the standards below the maximum achievable level, and then by allowing an escape clause for the manufacturers if the consumers did not accept sales mix necessary to meet that reduced level after every good faith effort to change their preferences. Finally, it provided a mechanism for recoupment of penalties, and for revision of the standards downward, subject to Congressional approval, if the standards could not be met.

There is only one statement in the report which could be claimed to limit this virtual requirement of significant sales mix shifts:

The fuel economy standards approach adopted in this legislation leaves maximum flexibility to the manufacturer to meet the standards. This should result in a more diverse product mix and wide consumer choice. In meeting the fuel economy standard applicable to any given model year one manufacturer could choose new technology, another could choose to shift more rapidly to lighter weight vehicles, and still another could choose some combination of the two.

S. Rep. No. 94-179, supra, at 6. Arguably, the "more diverse product mix" language limits the extent to which any mix shift could be pushed. However, this argument must be rejected because the language already states that the standards adopted in the bill, which include the significant mix shifts, will satisfy this concern. Rather than limiting the magnitude of the mix shifts necessary, this language seems to indicate that the approach of letting each manufacturer choose its own approach to meeting the standards will result in a more diverse product mix than the alternative legislative solutions that were considered, such as mandating the procedures to be used or forbidding the sales of vehicles getting below a specified fuel efficiency rating.

The legislative history of H.R. 7014, the bill containing the House version of the fuel economy provisions, is less specific in its treatment of product mix and market demand. The first references were in regard to the process of setting the 1980 standards:

The DOT-EPA study of the potential for motor vehicle fuel economy improvement indicates that with technological improvements and use of smaller engines but without any shift to smaller cars, sales-weighted fuel economy of automobiles sold in 1980 could reach 20.3 MPG in 1980 (a 45 percent increase above 1974). If the maximum feasible shift to small cars occurred, sales-weighted fuel economy could reach 22.2 mpg in 1980 (a 59 percent increase over 1974). The study assumed, for purposes of these projections, that these levels of fuel economy could be achieved without any reduction in the stringency of the statutory hydrocarbon (HC) and carbon monoxide (CO) emission standards which are scheduled to be effective in 1978.

H.R. Rep. No. 94340 (94th Cong., 1st Sess.) at 86, and

The Committee, in setting the statutory average fuel economy standards for passenger automobiles, gave careful consideration to the EPA-DOT study's conclusion that a 63 percent improvement in average fuel economy levels between 1974 and 1980 (22.2 MPG) was the maximum potential improvement in average fuel economy. This projection was on an industry-wide basis and was not a level which each manufacturer necessarily could be expected to reach; it assumed the maximum shift to smaller cars which was technologically feasible, and it appeared to assume that there would be no reduction in fuel economy associated with more stringent emissions standards. The Committee, in translating this industry-wide potential average fuel economy projection into an average fuel economy standard which each manufacturer must attain, was of the view that any emission standards likely to be in effect in 1980 would involve at least a 5 percent reduction (1 MPG) in average fuel economy in 1980. In addition, because of the likelihood that in that year a number of smaller manufacturers are likely to "overachieve" (have an average fuel economy in excess of the industry-wide target), the Committee felt it could set a standard for each manufacturer which was somewhat lower than the industry-wide target. In light of these considerations the Committee set the average fuel economy standard for each manufacturer at 20.5 MPG for model year 1980. The model year 1978 and 1979 standards were set at 2 MPG and 1 MPG, respetcively, below the 1980 standard.

*Id.* at 88.

Taken together, these two passages leave no doubt that the Committee based its standards on the improvement projection that included the significant product mix shift, as discussed above, and thus also implicitly accepted the possibility that mix shifts would be required to meet the standards. Id. at 87. This seems particularly clear from the second statement. The Committee started with one figure and made two adjustments in it to obtain the standard specified in the House bill. Since the starting figure was based on the mix shift assumed in the DOT-EPA report and since neither of the adjustments involved elimination of the mix shifts, the final figure must be based upon those shifts too.

The only other mention of product mix or consumer demand is the following:

* * * Committee recognizes that the automobile industry has a central role in our national economy and that any regulatory program must be carefully drafted so as to require of the industry what is attainable without either imposing impossible burdens on it or unduly limiting consumer choice as to capacity and performance of

motor vehicles. The Committee has devised the regulatory program, which appears in Part A of the bill. * * *

Id. at 87. Again, it is arguable that the "without . . . unduly limiting consumer choice" language could limit the extent of any market shift. However, it is again clear that the Committee believed that the program it had proposed would satisfy this constraint, i.e., that the mix shifts contemplated by the standards would not unduly limit consumer choice. Further, this passage proscribes only "*unduly* limiting consumer choice". (Emphasis added.) That is, consumer choice may not be limited unless it can be justified by resulting improvements in fuel economy.

Finally, the House bill did not contain any provisions allowing modification of any penalties incurred because of unanticipated sales mix. However, the bill contained provisions allowing both the carry-back and carry-forward of penalty credits for overachieving in any model year (section 508(a)(3)) and modification of the standards, subject to Congressional disapproval for decreases below 26 mpg or increases above 27.5 mpg.

The legislative history indicates that both houses of Congress expected that significant shifts in product mix might be required to meet the standards they were setting, and that there would have to be some efforts to induce the market to achieve these shifts. The manufacturers have a panoply of marketing measures, including, pricing, advertising, and dealer incentives, to aid them in such efforts. Both houses of Congress provided some mechanism for reducing penalties if the standards could not be achieved, with the Senate specifically providing for the effects of a failure of a manufacturer to succeed in inducing the market to accept the required mix.

The Act as finally adopted does not contain the Senate unanticipated mix provision, but is basically identical to the House bill in its penalty recoupment provisions. The fact that the Senate provision was eliminated may indicate either that a tougher standard was finally agreed to by the Senate, or that the recoupment and standard modification procedures were believed adequate to handle failures to achieve required product mixes. What is clear is that free market demand and product mix were in no way determinative of the standards finally adopted. If consideration of non-free market mix shifts is appropriate in establishing the 1980 standard, it must also be appropriate for the 1981–84 standards, which are required to result in "steady progress" over the 1980 base toward the 1985 target.

11. *Combining the improvement projections*. To determine the technologically feasible level of average fuel economy for each of the domestic manufacturers, it is necessary to combine the percent improvements assigned to each of the technological options discussed in section III.A, according to the phase-in schedule set forth in Tables 5.5–5.8 of the RSP. The methodology in the Support Document assumed (Doc. 2, Vol. I, p. 2–23), and the manufacturers did not seriously dispute, that the improvement options, including weight reduction, transmissions, engine improvements, and alternative engines could be combined in a straight-forward arithmetically additive manner. Question I.D. of the April 1 special order directed the automobile manufacturers to specify which, if any, of the options for improving fuel economy are not additive, to quantify any negative synergistic effect, and to submit any data relevant to this issue. GM responded that the options it had evaluated are additive. DN–18, p. 11. Ford presented a table showing areas of judged incompatibility between various options but presented no supporting data or rationale. DN–15, Doc. I, p. 14. Most of the areas of questionable additivity involved alternative engines. Chrysler expressed the opinion that the various options are either "additive or very nearly additive" and stated that it relied on the assumption of additivity for its own internal projections. DN–32, p. 12. Chrysler expressed uncertainty about the options related to engine speed, such as some accessory improvements and overdrive transmissions, but was unable to quantify this effect. Therefore, the assumption of additivity has been retained. Options which are mutually exclusive, such as improved automatic and manual transmissions, are of course not additive.

Based upon the technologically feasible weight reduction only, the Department projects that General Motors, Ford, Chrysler, and American Motors will be able to achieve 21.6 mpg, 21.6 mpg, 22.7 mpg, and 21.2 mpg, respectively, by 1981, and 22.2 mpg, 23 mpg, 23.6 mpg, and 24.7 mpg, respectively, by 1985. The following additional average fuel economy gains can be achieved through the use of the other technological options:

TABLE 1

| | Percent |
|---|---|
| Acceleration reduction | 10 |
| Automatic transmission with lockup torque converter | 10 |
| Five-speed manual transmission | 5 |
| Improved lubricants | 2 |
| Reduced accessory loads | 2 |
| Reduced aerodynamic drag | 4 |
| Reduced rolling resistance | 3 |
| Diesels (or equivalent alternative engine) | 20–25 |
| Further weight reduction (additional material substitution and further downsizing, including front wheel drive) | 5 |
| Improved spark ignition engines | 2–10 |
| Variable displacement engines | 3–7 |
| Turbochargers | 0–15 |
| Domestic production of captive imports | 0–4 |
| Mix shift to 10 pct large, 25 pct intermediate, 25 pct compact, and 40 pct subcompact | 5 |

B. *Economic practicability*. In considering the economic practicability of implementing the technologically feasible options in 1981–84, the Department examined several different schedules of standards based upon different sets of options. The sets ranged from one that was almost fully comprehensive to one that included only a select number of the options. Excluded from all sets were some spark ignition engine improvements, variable displacement engines, further weight reduction beyond that initially projected in the Support Document or submitted by the manufacturers, and domestic production of captive import passenger automobiles. Due to the lack of complete data for these options and their omission from the NPRM and Support Document, they have been excluded from further consideration in this rulemaking. Efforts will be made to supplement the Department's data base in these areas in future rulemaking proceedings.

The least comprehensive set was that underlying the schedule of standards suggested by Ford: 21 mpg in 1981; 22 mpg in 1982; 23 mpg in 1983; 24 mpg in 1984; and 25 mpg in 1985. Even though that was the highest schedule suggested by any manufacturer, the Department regards it as a low range schedule. It was rejected for several reasons. First, it would not satisfy the maximum feasible requirement. The manufacturers have available to them options that involve little or no engineering or marketing risk that in combination would be economically practicable and would enable them to exceed substantially Ford's suggested schedule. Second, the schedule would violate the requirements that the 1981–84 standards result in steady progress toward the 1985 standard which, unless changed by future rulemaking, is 27.5 mpg, not 25 mpg.

The Department also considered a high range schedule based on all of the options not excluded in the first paragraph of this section.

The Department believes that there are risks associated with substantial mix shifts notwithstanding the historical trend toward smaller passenger automobiles. While that trend may continue, there is no assurance that it will. For reasons including prestige, comfort, and sheer size, there continues to be a strong demand for mid size and large size passenger automobiles. This is true even though most of these automobiles offer no more seating capacity in terms of number of positions than some compacts. Further, as discussed below, the downsizing of passenger automobiles may at least temporarily slow the trend to small cars. Further, the Department lacked sufficient marketing data to justify a lesser shift toward small cars.

Given the overriding purpose of the fuel economy provisions in the Act to conserve fuel, the Department was concerned that the standards be set as high as possible, but not so high as to necessitate the manfacturers' using compliance methods that would result in a substantial sales drop. To the extent that the total passenger automobile population fails to turn over and renew itself at the usual pace because some owners retain their existing vehicles for an extra year or two, the projected fuel savings from a given fuel economy standard would not be fully realized. In addition, a substantial sales drop would have a significant effect on employment in the automobile and related industries and would adversely affect the manufacturers' efforts to raise capital for further fuel economy improvements. See RSP, Chap. 13, Reference 27, Section E.

The Department concluded that the implementation of the schedule of standards resulting from this set was not economically practicable due to the risk posed by substantial number of consumers might defer purchasing new passenger automobiles in 1981-84. Further, implementing all of the options in this set would result in levels of average fuel economy above those permitted under the steady progress requirement, since the 27.5 mpg level would be exceeded prior to 1985.

The Department is also concerned about the possible adverse environmental impacts associated with some alternative engines, notably the diesel. As discussed above, several commenters pointed out that particulate and PNA emissions of these engines may pose a health hazard. If the existence of a health hazard is confirmed by the Environmental Protection Agency, then regulation of those emissions will presumably follow. The stringency of those regulations and their effect on the fuel economy of the alternative engines is indeterminate at this time. As information from that agency and other sources clarifies this question, the Department will begin to consider whether to base fuel economy standards on the use of those engines.

For all of the foregoing reasons, the Department decided not to set the average fuel economy standards so high as to necessitate the use of all options within the limited period of 1981-84.

The Department also considered a medium range schedule of standards based on a less comprehensive set of technological options from which alternative engines and mix shifts had been excluded. In excluding these options as bases for determining the fuel economy standards under this set of options, the Department was particularly mindful that there will be substantial changes in passenger automobiles in the early 1980's due to changes in fuel economy and emission standards. In a later period of less product design and technological flux, the risk associated with mix shifts and alternative engines would be lessened.

The Department regards mix shifts and alternative engines, as well as the options excluded from the high range set of options, as constituting a safety margin for the manufacturers that choose to implement the medium range options to the extent set forth below. If the latter options do not yield the anticipated gains, despite the conservative assessments of those gains, the manufacturers may avail themselves of options in the safety margin. For manufacturers which do not wish to implement the medium range collection of options in the amount described below, these additional options represent alternative options which they can utilize. The Department notes that virtually every option excluded from the high or medium range sets of options will be used by at least one manufacturer and some by several. To the extent that these options are used, the manufacturers will not have to rely so much on the collection of medium range options. Further, all manufacturers can use marketing measures to encourage the purchase of the most fuel efficient vehicles within each carline.

The schedule for implementation of the various middle range technological options or improvements, which are set forth in Tables 5.5-5.8 of the RSP, reflect the differences in economic capability of the various domestic manufacturers. That implementation schedule is in no case more stringent than that in the NPRM Support Document. See Document 2, Volume 1. None of the manufacturers claimed that the proposed implementation schedule is impracticable. However, objections to specific cost assumptions in the Support Document were submitted by some manufacturers. Since these cost numbers affect the projected sales, employment and inflationary impacts of the standards, and thereby economic practicability, these objections have been carefully reviewed. However, the vagueness and unsubstantiated character of the assertions in the manufacturers' comments have impaired the usefulness of the submitted information, here as in the case of the technological issues discussed in section III.A.

General Motors, Ford, and Chrysler all objected to the projected capital investment requirement for downsizing of \$150-250 million for an annual production capacity of 400,000 automobiles. All stated that this figure was about half the correct amount. DN-18, p. 18 (GM), DN-43, Att. II, p. 2 (Ford), and DN-30, p. 53 (Chrysler). Therefore, and in view of the fact that GM and Ford already have had substantial experience with implementing this technological option, the capital requirement for downsizing was revised to the \$400 million figure. GM and Chrysler both objected to the variable cost savings of \$200 assigned to downsizing, but neither submitted a different figure or a detailed critique of the Department's analysis. Ford's discussion of the savings resulting from the introduction of a new, small, future car line is consistent with the Department's assumption, when weight reduction and concurrent product improvements are separated. DN-43, Att. II, p. 3. Therefore, the originally projected savings in variable cost was retained. Chrysler's unquantified objection to the maintenance cost figure is also rejected. The Department's further evaluation of data supporting the original projection of a 35 cents/pound maintenance cost saving reaffirms the original conclusion. See Support Document, Summary Report, p. R-2, #3.

GM, Ford, and Chrysler raised similarly vague objections to the projected capital and variable costs attributable to material substitution. DN-18, p. 19; DN-43, Att. II, p. 4; DN-30, p. 54. Nevertheless, Chrysler conceded that the use of high strength steel would have no appreciable effect on variable costs. Detailed cost information on the use of aluminum and high strength steel was submitted by Alcoa and U.S. Steel Corporation, respectively. DN-27-D, DN-27-A. Both submissions supported the Department's original conclusion about the cost of light-weight material substitution. If components are selected from the lists of feasible material substitutions provided by these two companies, it is possible to achieve the weight reductions projected in the Support Document without increasing variable costs. Further weight reductions could be achieved at slightly higher cost. Similar objections were raised to cost savings attributable to reduced maintenance. However, as noted above, the Department's further study in this area fully supports the Support Document's projected relationship between weight reduction and reduced maintenance expense. This savings results from, as one example, the ability to use smaller tires on lighter automobiles, thereby reducing replacement costs. GM failed to quantify or substantiate its claim that the lighter weight substitute materials would be more damage prone than present materials, DN-18, p. 22. The Department's analysis, together with the Alcoa and U.S. Steel submissions, supports the achievability of the assumed weight reduction by careful matching of a particular substitute material to the particular application desired. Furthermore, GM failed to address the savings associated with the improved corrosion resistance of aluminum or plastic substitutes. DN-27D, p. 2 (Alcoa). Therefore, the original maintenance costs savings estimate has been retained.

The costs associated with improvements in such areas as lubricants, accessories, aerodynamic drag reduction, and rolling resistance reduction are as set forth in Table 7.1 of the Rulemaking Support Paper. No contradictory information was submitted on these costs, in response to a specific question in the April 1 and April 21 special orders. DN-7, DN-28, Question II. A.

No manufacturer challenged the costs attributed to automatic transmission improvements. Chrysler, the only manufacturer to address the issue specifically, found the costs to be within "an acceptable planning range." DN-30, p. 55. For the purposes of the total cost calculation, the upper bound of the cost range for the four speed automatic transmission was used as a "safe" estimate. This probably overstates the total cost impact, since, as previously noted, it is likely that a variant of the three-speed transmission would in fact be used. Capital requirements associated with the four-speed unit are up to twenty times greater than those for the three-speed (less than \$10 million vs. \$200 million per standard production facility with a capacity of 500,000 units per year), since relatively inexpensive changes can be made to existing transmission production facilities to accommodate improvements to three speed units, while complete new plants are necessary to produce four speed units.

Reductions in acceleration performance were assumed to be achieved through the substitution of existing smaller displacement engines, up to the maximum level consistent with production flexibility at existing engine plants, at no increased cost. These reductions could also be achieved through axle ratio changes, at negligible cost.

Total required capital expenditure to achieve the postulated fuel economy was generally within the range of planned expenditures for fuel economy improvement over the 1976–85 time period. DN-30 p. 52 (Chrysler); DN-15, Doc. I, p. 20 (Ford); p. I-18, Economic Impact Statement (see sec. VIII infra). However, it is not correct to treat this as a totally "extraordinary" investment required of the automotive industry in order to comply with fuel economy standards. Much of this expense is "integral to the normal cycle of product improvements" which the companies would engage in regardless of the standards. DN-30, p. 55 (Chrysler). The fact that improved fuel economy is itself a highly marketable attribute for passenger automobiles might force th companies to make many of the product improvements discussed in this notice, as a result of competitive market pressures regardless of the fuel economy standards. DN-15, Doc. I, p. 20 (Ford). Conceptually, this means that the automobile companies must, as part of each decision to change a significant component in a passenger automobile, take into account, and possibly reorient their product line in view of, the fuel economy requirements. Therefore, the capital expenditures discussed above have been adjusted to take into account "business-as-usual" reinvestment, which would occur even in the absence of any standards. A further discussion of this topic is contained in the RSP, Reference 27, Chap. 13.

The total cost increases are assumed to be reflected in increased new passenger automobile prices according to the formulas set forth in the Support Document. See Summary Report, p. A-27. Generally, the manufacturers did not object to the total or "bottom line" price changes generated by this methodology, although they did not necessarily agree with all of the details. See, e.g., DN-15, Doc. I, p. 21 (Ford). GM merely noted that price increases are determined by market forces, rather than some arbitrary cost pass through formula. DN-18, p. 24. The Department does not take issue with that statement, but some method must be used to assess price impacts, and no participant in the proceeding suggested a better alternative. Chrysler argued that the methodology did not provide for recovery of the value of the investment itself. DN-32, p. 19. However, it appears that Chrysler has misunderstood the application of the methodology since capital costs are assumed to be recovered by price increases tied to the rate of return on investment. The projected impact on new car prices, as shown in Table 8.1 of the Rulemaking Suport Paper, is an increase of $54 by 1985, as an industry average, relative to 1977 model year automobiles. When gasoline and maintenance savings are considered, net savings to the consumer of approximately $1,000 over the life of the automobile are projected. See Table 8.4, RSP.

The final impacts to be considered in the evaluation of economic practicability are the projected impacts on industry sales and employment. These impacts were projected by using the Wharton Automobile Demand Model. See Support Document, Summary Report, p. A-91. This model is one of the latest and most complex for projecting automobile industry sales and employment. See DN-15, Doc. I, Att. A, p. 176. (Ford); DN-30, p. 38 (Chrysler).

On the basis of this projection, domestic industry sales and employment would attain levels higher than present levels during the 1981–84 period, and would be approximately the same as would be the case if there were no additional costs attributable to fuel economy standards. A sensitivity analysis that assumes a 2 percent per year increase in automobile prices for the 1981–84 model years shows a small decrease in projected sales during those years and a small increase in subsequent years. Since the average change in car prices due to these fuel economy standards for those same model years is only 0.1 percent, the effect on sales is similarly small.

The Department has been unable to quantify the impact of such non-price changes as acceleration capability reductions and exterior downsizing. However, as discussed in section III.A of this notice, these impacts are not expected to be severe. The Department has taken into account any possible adverse impacts in those areas by the provision of a "safety margin" of fuel economy improvement potential and in the discussion of uncertainties in section IV.

The industry generally argued that the uncertainty of consumer acceptance of more fuel efficient vehicles was a major concern in this rulemaking. Tr-I, pp. 19 (Ford), 50 (GM), 78 (AMC), and 104 (Chrysler). However, these statements appear to be more in the nature of fear of the unknown than the result of detailed study and analyses. See Tr-II, pp. 10, 23, 58, 62–64, 121, 146, 161. The Federal Energy Administration's own analyses show that it is the "manufacturer's response to the standards, rather than the consumer demand, that most influences new car fleet average fuel economy under a scenario of little or no market shift." DN-37, p. 2. The provision of a safety margin of technology permits a variety of manufacturer responses.

Improvements in automotive fuel economy, if unaccompanied by adverse impacts on other automobile attributes, are undeniably an aid to marketability. The technological options relied upon are not expected to have such accompanying detriments. Among these options, material substitution, and improvements in accessories, lubricants, aerodynamic characteristics, and rolling resistance are virtually undetectable by consumers, except with respect to price changes, whose impact has been accounted for above. Downsizing, while maintaining or even increasing vehicle interior roominess, has been accomplished without consumer rejection to date, in the case of General Motors' full-size automobiles. Although downsizing of all market classes has yet to be completed, it appears likely that purchasers of the largest size automobiles are the group most concerned about size attributes, and if they are willing to accept downsized vehicles, the purchasers of other market class automobiles would also accept them. With respect to automatic transmission improvements, it appears that past driveability problems with lock-up torque converters are near resolution, in view of some manufacturers near-term implementation plans. Acceleration performance reductions have been limited to those within the manufacturers' stated range of consumer acceptability. Turbochargers could be used to offset even those very modest acceleration reductions. Safety margin technology would permit flexibility in selecting compliance approaches which individual manufacturers find more saleable than the ones projected in this analysis. Further, it is likely that consumer acceptance of fuel efficient automobiles will increase as gasoline prices increase in the future. Therefore, the Department concludes that marketability constraints would not prevent the attainment, in an economically practicable manner, of the standards promulgated herein.

Thus, it appears that the total impact of the fuel economy standards established in this notice is relatively modest, certainly within the "economic capability of the industry." The Department concludes that compliance with these standards is economically practicable.

C. *The effect of other Federal standards.* The next step in calculating the manufacturers' maximum achievable fuel economy is an assessment of the impact of other motor vehicle standards on fuel economy. It is impossible at this time to predict with perfect accuracy even the level of these standards which will be in effect in the 1981–84 period, since all categories of these standards are either subject to future administrative action or are being reviewed by Congress. Nevertheless, for the purposes of this analysis, it is assumed that the applicable automotive emission standards will be those contained in the Administration proposal, i.e., 0.41 gram per mile hydrocarbons, 3.4 grams per mile carbon monoxide, and 1 gram per mile of nitrogen oxides, with waivers for nitrogen oxides up to 1.5 gram per mile for heavier diesel automobiles, if necessary. The same result would apply under either the House or Senate passed emission standard schedules.

The issue of the impact on fuel economy of various proposed emission standards was one of the more controversial ones in this proceeding. Much development work remains to be done in the emission control area between now and

1981, so projections in this rapidly progressing area necessarily involve some degree of uncertainty. However, the Environmental Protection Agency (EPA) has done extensive evaluation of the emission control systems now under development. The Department of Transportation has worked with the EPA in many of these studies.

Among the more recent of these studies are the February, 1977, report titled "Analysis of Effects of Several Specified Alternative Automobile Emission Control Schedules Upon Fuel Economy and Costs," prepared jointly by the Departments of Commerce and Transportation, the Energy Research and Development Administration, EPA, and FEA; an EPA report dated April, 1977, titled "Automotive Emission Control—The Development Status, Trends, and Outlook as of December 1976;" and the May 19, 1977, "Analysis of Alternative Motor Vehicle Emission Standards." (All of these reports are in the General Reference section of the FE 76-01 Docket.) All three reports evaluate the optimal emission control systems for meeting emission standards at minimum fuel economy penalty, and all three conclude that little or no penalty need result from the use of optimal systems at the level of the proposed emission standards, as compared to 1977 levels. This conclusion was supported by those public interest representatives which participated in this proceeding and addressed the issue. DN-11, p. 8 (Mr. Thomas Austin); DN-12, p. 33 (Citizens for Clean Air); DN-13, p. 16 (Environmental Defense Fund).

As identified in Appendix A of the May 19, 1977 DOT-EPA-FEA report, fuel optimal systems to meet standards of 0.41 HC/3.4 CO/1.0 NOx may be expected to include a three-way catalyst, start catalyst, electronic spark advance, electronic control of exhaust gas recirculation, electronic air-fuel ratio control, oxygen sensor, high energy ignition, improved fuel metering, and a complex electronic control unit. In addition, the heavier cars, those weighing more than 3000 lbs., would have an air injection unit.

The passenger automobile manufacturers' views on the issue of emission standard penalties varied rather widely. Ford stated that the proposed emission standards could be achieved without fuel economy penalty through the use of three-way catalyst and full electronic control technology. DN-15, Doc. I, p. 24, Doc. III, p. 4, Tr.-II, p. 93-4. Volkswagen stated that compliance with the emission standards without a fuel economy penalty was possible. DN-28-01, p. 2. Daimler-Benz projected that compliance with the more stringent emission standards would produce a 3 to 5 percent benefit in fuel economy for the portion of its fleet which presently employs fuel injection. DN-28-05, p. 34.

On the other hand, the remaining domestic manufacturers all project substantial emission standards fuel economy penalties. GM claimed to have experienced fuel economy penalties as high as 20 percent on some prototype vehicles (DN-18, p. 27), although it admits that much development work remains to be done. Tr.-II, p. 124. Chrysler projected a penalty of 12 percent (DN-30, p. 62, DN-35-01, Att. B, p. 27), but projects the use of a control system which is apparently less efficient than that assumed by EPA. DN-30, p. 61, in such areas as the use of electronic spark advance, port liners, and start catalysts. Further, Chrysler's projections were apparently based on actual test data from their 1977 California vehicles, adjusted by some arbitrary amount for future system optimization. These vehicles do not employ three-way catalysts and full electronic controls on which EPA's projections are based. Tr-II, p. 258. Likewise, AMC's projected fuel economy penalties were based on their present California technology, not the advanced system assumed by EPA. DN-14, p. 3. GM also assumes a control system less complex than EPA's by not including the use of such technology as electronic exhaust gas recirculation, electronic air-to-fuel ratio control, port liners, and start catalysts. DN-18, p. 27. GM remains hopeful that, given enough development time, the penalty could be eliminated. Tr-II, p. 124.

Ford notes that, even with the three-way catalyst, a clean up catalyst, and a full electronic system to meet the 0.41 HC, 3.4 CO, 1.0 NOx standard, it would expect a 2 percent difference in average fuel economy between the first and third year of the standards. DN-15, Doc. I, p. 15. The May 19, 1977 DOT-EPA-FEA report observes that:

"The development of technology to control emissions and permit good fuel economy calibrations to be maintained is expected to take longer than just the development of technology solely for the purpose of controlling emissions. For example, the use of electronic controls which have the potential to be an important part of future low emission, fuel efficient systems will require the generation and analysis of significant quantities of new engine data in order to determine more optimum calibrations."

Thus, it appears that none of the manufacturers presented any evidence which would directly contradict EPA's findings in this area, and in fact some manufacturers supported the "no penalty" assumption. Therefore, it is concluded that compliance with the specified emission standards in the 1981-84 time period can be achieved with little or no fuel economy penalty, through the use of the advanced control technology postulated by EPA. In the technical analysis contained in the RSP, a fuel economy penalty of zero percent is used for all the 1981-84 models.

One other issue with respect to the emission standards was raised by AMC and Chrysler. Those two companies claim that an emission test procedure change recently proposed by EPA (41 FR 38674, Sept. 10, 1976) would, if adopted, adversely affect the derivative fuel economy data. DN-23, p. 2 and DN-30, p. 30. Chrysler projects a very small impact for this revision on fuel economy, to the order of 0.28 mpg. The change in question involves decreasing the magnitude of inertia weight class increments and modification of the road load horsepower requirements. The proposed changes are intended to permit dynamometer testing of vehicles at inertia weight and road load settings that are more representative of actual vehicle weight and road load, so that the resulting fuel economy value would be a more realistic estimate of on-the-road fuel economy. Since this test procedure change is merely a proposal, it is unnecessary to attempt now to quantify the precise impact of any test procedure revisions which EPA may ultimately adopt. It should be noted further that EPA presently believes that the revisions in question should not result in a systematic change in fuel economy data either upward or downward, but rather that the revisions tend to improve the overall accuracy of the data. DN-20, p. 2.

An adjustment is made to each manufacturer's projected fuel economy capability to allow for the added weight associated with Federal Motor Vehicle Safety Standards. To assure adequate crash survivability in the passenger automobiles of the 1980's, additional safety requirements will be necessary. Those requirements are anticipated to cause an estimated 1 percent fuel economy penalty. See RSP.

The Department has no basis at this time to project the existence of any other motor vehicle standards at a specific level. If these projections are proven erroneous by future events, and if the impact of those future standards would substantially reduce the safety margin provided in this notice, it may be necessary to reconsider the standards promulgated herein.

D. *The need of the Nation to conserve energy.* As discussed in section II.B of this notice, this final consideration in establishing maximum feasible average fuel economy levels requires the establishment of fuel economy standards at the highest level consistent with the other statutory considerations.

When the four statutory considerations are considered together, the fuel economy levels achievable by the four domestic manufacturers, as derived from the above analyses, are as set forth in Table 2 below. These numbers are based on a 0 percent emissions penalty. For the reasons discussed in section III.E below, including consideration of the emissions standards, an adjustment is made in that section to Table 2.

TABLE 2

| Manufacturer | 1981 | 1982 | 1983 | 1984 |
|---|---|---|---|---|
| American Motors | 22.2 | 22.6 | 23.1 | 24.7 |
| Chrysler | 23.8 | 25.1 | 26.3 | 28.1 |
| Ford | 23.4 | 24.5 | 26.1 | 27.0 |
| General Motors | 23.3 | 24.2 | 26.5 | 28.8 |

E. *Establishing the maximum feasible average fuel economy level.* In determining maximum feasible average fuel economy, the Department cannot simply select the level achievable by the least capable manufacturer in each model year. Instead, an analysis along the lines of that set forth in pages 154-5 of the

Conference Report must be carried out. That Report states:

> Such determination should therefore take industrywide considerations into account. For example, a determination of maximum feasible average fuel economy should not be keyed to the single manufacturer which might have the most difficulty achieving a given level of average fuel economy. Rather, the Secretary must weigh the benefits to the nation of a higher average fuel economy standard against the difficulties of individual automobile manufacturers. Such difficulties, however, should be given appropriate weight in setting the standard in light of the small number of domestic automobile manufacturers that currently exist, and the possible implications for the national economy and for reduced competition associated with a severe strain on any manufacturer. However, it should also be noted that provision has been made for granting relief from penalties under Section 508(b) in situations where competition will suffer significantly if penalties are imposed.

It is clear from this admonition that in certain circumstances the standards must not be set at levels which every manufacturer will be able to achieve in every year. Rather, they should be set at some point above those levels. Whether and how far standards should be set above those levels depends on a balancing of the burdens placed on the manufacturers with lower achievable average fuel economy on one hand against the benefits of a higher standard on the other. This in turn requires an analysis of the impacts of civil penalties imposed on the manufacturers at a given standard level. Implicit in this analysis is consideration of the ability of a manufacturer to apply civil penalty "credits" from other years to reduce or eliminate a penalty and of the ability of the Department to compromise penalties where insolvency, bankruptcy, or substantial lessening of competition may occur. See section 508 of the Act. The latter possibility is especially significant in the case of American Motors, which has reported no taxable income over the past ten years and has suffered serious declines in its sales in the past year, DN-14, p. 6 and Attachments, and whose projected maximum achievable fuel economy is substantially less than its domestic competitors. See Table 2.

When this clarifying language in the Conference Report is applied to the projected maximum feasible fuel economy values for each manufacturer as set forth in Table 2, it becomes clear that in establishing these standards the "least capable" manufacturer should not be the limiting, constraint in determining maximum feasible average fuel economy. From that Table, it appears that the projected maximum feasible level for AMC in the years 1981–84 ranges from approximately one to three miles per gallon less than that of the least capable of the "Big Three" in each of those years. In terms of the nation's petroleum import bill, the cost to consumers of setting the fuel economy standards at the level attainable by AMC as opposed to basing it on that attainable by the "Big Three" could be nearly half a billion dollars in 1983 alone. Against the benefit of avoiding that substantial cost through establishing higher standards, the Department must balance the potential civil penalty liability which AMC could be subject to, which could be up to $145 per automobile sold in 1983. Further, the Department must consider AMC's present small market share of under 3 percent of the domestic market and its resulting relatively small impact on industry employment, and the possibility discussed in the previous paragraph that any civil penalty liability might be mitigated by the Department. In view of these considerations, the Department must not base its determination of maximum feasible average fuel economy on the single domestic manufacturer with the lowest projected fuel economy capability.

While the Department believes that the previoous paragraph correctly applies the statutory criteria, it may paint a misleading picture of AMC's ability to meet fuel economy standards. First, as previously discussed, the projected fuel economy values in Table 2 are based on a limited class of available fuel economy improvement methods. AMC could adopt additional measures to improve fuel economy. Second, a number of further measures are available to relatively small manufacturers such as AMC to achieve major improvements in average fuel economy in a short time period. Among these are the discontinuance of sale of poor fuel economy model types and the purchase of high efficiency engines and other technology from outside sources. Both of these options require minimal capital investment and are readily implementable. The Department has no information on AMC's precise product plans over the next several years, but it appears that some significant initiative is planned which would result in major fuel economy improvements for that company's automotive fleet. Recently, AMC's President predicted that their corporate fuel economy average would achieve 27.5 mpg by the early 1980's. "Ward's Auto World," June 1977, p. 30, Docket Number FE-76-01-GR-16. AMC officers also testified that they expect the average fuel economy of their passenger automobiles to remain competitive with that of the other domestic manufacturers, and not fall significantly below that level, as the Table 2 numbers might indicate. Tr-II, p. 220. Thus, it appears that AMC's future average fuel economy levels may be significantly understated in the DOT analysis, and the resulting civil penalty impact correspondingly overstated.

The Conference Report clarification of the "maximum feasible" requirement also has implications for the "Big Three" manufacturers. Although the fuel economy improvement potentials of those three companies were found to be relatively close numerically, some significant fuel savings benefit could be achieved by setting the fuel economy standard at a level higher than that found to be achievable for the least capable of the three. The harm suffered by those companies as a result of a higher standard is measured by the magnitude of the civil penalties generated. If the calculation of manufacturer-specific fuel economy improvements in Table 2 is correct, and if each manufacturer improved its average fuel economy up to those levels in each year, no net civil penalty liability would result for the "Big Three" if the maximum feasible average fuel economy levels were established as follows: 23.3 mpg for 1981, 24.6 mpg for 1982, 26.1 mpg for 1983, and 27.4 mpg for 1984. At those levels, any civil penalty liability for those companies in one of the affected years would be offset by credits obtained for overachievement in prior or subsequent years. The only obvious adverse impact from adopting this approach would be possible bad publicity resulting from the failure to meet standards. In view of the fact that the Act's sanctions are monetary civil penalties, which can be offset from year to year, no major stigma would attach to single year noncompliance. In fact, the Act's unique enforcement scheme appears to be designed to create economic incentives for encouraging compliance rather than harsh sanctions for noncompliance. Therefore, the Department has concluded that any harm to the individual manufacturers from single year noncompliance would be outweighed by the benefits of establishing "maximum feasible average fuel economy" at levels where these manufacturers would pay no net civil penalty, taking into account their ability to carry credits forward or back.

The Department has concluded that the emissions standards expected to be effective in the early 1980's can be achieved with little or no fuel economy penalty. The analysis of average fuel economy potential discussed above was predicated upon a zero penalty. It appears clear, however, that the engineering and manufacturing problems associated with the introduction of complicated emission control technology may well be substantial, particularly since these advancements will have to be implemented simultaneously with other new technology required to meet fuel economy and safety standards. Although the Department has already tried to ensure the soundness of its average fuel economy standards by making generally conservative conclusions at each step in its analysis, no allowance has yet been made for unforeseen contingencies that may arise due to the need for manufacturers to deal simultaneously with the diverse set of manufacturing requirements imposed by the various fuel economy, emissions, and safety standards that will become effective in the early 1980's, particularly in 1981. Allowing for such contingencies is consistent with the approach taken by the Senate Commerce Committee in establishing the 1980 average fuel economy standard in S. 1883. See S. Rep. No. 179, 94th Cong., 1st Sess. 10 (1975). More important, allowance of these contingencies will ensure that the manufacturers can produce and sell cars that meet energy, environmental, and safety needs of the Nation. It is important to recognize that one limitation on the rate of product innovation is the rate of consumer acceptance of that innovation. Finally, there are some uncertainties, particularly in the later years of the 1981-84 period, associated with the accuracy of the estimates of the average fuel economy to be gained from the combination of the various technological options.

In view of the factors enumerated in the immediately preceding paragraph, the Department has determined it to be prudent to adjust the no net penalty average fuel economy levels to 22 mpg for 1981, 24 mpg for 1982, 26 mpg for 1983, and 27 mpg for 1984. Based upon consideration of the domestic manufacturers, the Department has determined that these are the maximum feasible levels of average fuel economy for those model years.

### IV. THE IMPORTS

With the possible exceptions of downsizing, mix shifts, straight-line acceleration reductions, and domestic production of captive imports, the same technological improvement options apply to the imported passenger automobiles as to their domestic counterparts. Since the passenger automobiles produced in foreign countries generally start at a much higher fuel economy base, those passenger automobiles can generally meet any level of average fuel economy which the domestics can attain. However, the possible unavailability of the options listed above and the fact that the U.S. market may account for only a small portion of such manufacturers' total sales necessitate an analysis of the impact of fuel economy standards on the foreign manufacturers.

Total sales of imported automobiles has varied between approximately 15 and 20 percent of total U.S. sales for the past four years. The four largest importers in 1976, Toyota, Nissan (Datsun), Volkswagen, and Honda, accouned for approximately two-thirds of the import total. "Automotive News 1977 Market Data Book Issue," p. 70. Each of these four manufacturers either presently has or will have in the near future an average fuel economy exceeding the 1985 standard of 27.5 mpg. DN-9, p. 1 (Toyota); DN-28-03, p. 1 (Honda); DN-28-04, p. 5 (Nissan); DN-16, p. 2 (VW-projections exclude Rabbit). Therefore, the majority of the import market must only maintain or marginally improve their present average fuel economy levels to comply with these fuel economy standards. Another group of importers, accounting for nine percent of import sales, are presently either meeting the 1985 standard or are in close proximity of that goal. This group includes Subaru, and the captive import fleets of Chrysler and GM. See 1977 EPA/FEA Gas Mileage Guide, Second Edition. Of the remaining manufacturers, which account for a total of slightly more than 20 percent of all imports, Volvo, Daimler Benz, and British Leyland are the largest importers which may face difficulties in meeting a fuel economy standard of 27.5 mpg. Volvo and Daimler-Benz each account for approximately 3 percent of the import total, with British-Leyland accounting for nearly 5 percent.

Volvo projects that it could achieve an average fuel economy level not higher than 24.5 mpg by 1985. DN-28-02, p. 9. This level of fuel economy would result in the imposition of a civil penalty of $150 per passenger automobile sold in the U.S. Since Volvo presently sells its passenger automobiles in the $7,000 to $10,000 range and since demand in that price range is relatively inelastic, the added cost would not be likely to reduce sales substantially. Furthermore, NHTSA believes that it may be possible for Volvo to achieve better fuel economy than it has projected. For example, the Volvo projection is apparently based on the assumption that no weight reduction is achieved, although its 244 model weighs nearly 400 pounds more than a comparable Audi 100LS. See DN-28-02, p. 9 and "Automotive News," supra, at 76-7.

Daimler-Benz projects being able to attain levels of fuel economy close to those projected for the domestic manufacturers (DN-28-05, p. 32), primarily by achieving a diesel market penetration of over 60 percent by 1980. DN-10, p. 8. This projection is also based on relatively little weight reduction. For example, Daimler-Benz projects that by 1985 its two-seater sports model will be in the same or a higher inertia weight class as the GM "hypothetical scenario" projects for large-size six-seater passenger automobiles. DN-28-05, p. 31 and DN-18, p. 13. Even if Daimler-Benz' projections reflected the maximum fuel economy improvement achievable by that company, the civil penalties resulting from noncompliance with the fuel economy standards would likely be less than those mentioned above with respect to Volvo and would have a negligible impact on sales of passenger automobiles whose prices are in the $10,000-$20,000 range.

British Leyland's present product mix is split between relatively inexpensive two-seater sports cars and luxury cars in the Mercedes price range. The small sports cars are highly inefficient even by present standards. For example, the MG Midget and Triumph Spitfire weigh about the same as a Volkswagen Rabbit, yet the Rabbit has roughly 50 percent more horsepower and 25 percent better fuel economy. The Toyota Celica weighs 200 pounds more and has 50 percent more horsepower than the MG-B, yet the Toyota has about 18 percent better fuel economy. See "Automotive News," p. 76, and 1977 EPA/FEA Gas Mileage Guide. Therefore, it seems likely that substantial improvements must be made to the smaller British Leyland products just to be competitive in the U.S. market. If such improvements are made, the British Leyland average fuel economy level would be close enough to the standards promulgated herein to allow any required civil penalties to be passed on to consumers of the luxury passenger automobiles which are responsible for bringing down their average.

In summary, it appears that the manufacturers of the less expensive import passenger automobiles are already in compliance with the applicable fuel economy standards through 1985, or are close to that level now and can readily achieve compliance. The manufacturers of the more expensive imports may face some difficulties in meeting the standards. However, if those difficulties prove to be insurmountable, the manufacturers will incur civil penalties that will be small in comparison to the price of their passenger automobiles. Therefore, and in view of the Congressional admonition against basing these standards on the least fuel efficient manufacturer (see pages 154-5 of the conference report on the Act, S. Rep. No. 94-516, 94th Cong., 1st Sess. (1975), and section III.E of this notice), it is concluded that the establishment of these standards is not constrained by the capabilities of these import manufacturers. A more detailed discussion of the capabilities for improving fuel economy of these manufacturers is contained in Appendix E of the Rulemaking Support Paper. Accordingly, the Department has determined that the maximum feasible average fuel economy levels based upon consideration of domestic and foreign manufacturers are the same as the levels set forth at the end of section III.E.

### V. THE "STEADY PROGRESS" CRITERION AND SETTING THE STANDARDS

The final step in the standard-setting process is the application of the "steady progress" criterion. As discussed in section II, this provision requires that the standards increase each year, that all standards fall between 20 and 27.5 mpg, and that none of the resulting annual increases be disproportionate to the other increments. The Department has determined that the maximum feasible levels of average fuel economy specified at the end of Section V meet each of these tests and therefore will result in steady progress toward the 1985 standard of 27.5 mpg. Therefore, average fuel economy standards are: 22 mpg for 1981; 24 mpg for 1982; 26 mpg for 1983; and 27 mpg for 1984.

### VI. ADDITIONAL COMMENTS ON THE NPRM

Most substantive comments received relating to the establishment of 1981-84 fuel economy standards have been discussed above, primarily in section III, as they relate to the development of the standards. However, certain additional comments on the NPRM deserve further discussion.

The single point raised most frequently in the rulemaking proceeding by the automobile industry did not relate to the technological feasibility or economic practicability of any particular level of average fuel economy, but rather involved the uncertainties inherent in the establishment of these standards. Among the uncertainties raised by industry were the precise fuel economy improvements achievable with the various items of technology, consumer acceptance of the more fuel efficient automobiles to be produced in the future, the impact of future motor vehicle standards in areas other than fuel economy, and the state of the national economy over the next eight years. Tr–I, p. 106 (Chrysler); Tr–I, p. 53–58 (GM); Doc. IV, pp. 17–35 (Ford). The manufacturers were unable to relate the alleged areas of uncertainty to any particular quantified impacts on sales or to any particular levels of average fuel economy standards. The Department recognizes that areas of uncertainty exist in this proceeding, although not fully agreeing with the manufacturer's assessments of the magnitude of the resulting risks, particularly in the technology area. But cf. Tr–I, p. 53, where GM characterizes the latter uncertainty as "relatively small." The Department also recognizes that in making projections as to future events and capabilities it is not appropriate to engage in a "crystal ball inquiry." "Natural Resources Defense Council v. Morton," 458 F. 2d 827, 837 (D.C. Cir. 1972). Nevertheless, the Act, in requiring that 1981–84 model year fuel economy standards be established by July 1, 1977, necessarily contemplates that standards will be established on the basis of less than perfectly certain information. Nor does the law require such certainty, so long as projections rest on a rational basis. See generally "Ethyl Corp. v. EPA," 541 F. 2d 1, 28 (D.C. Cir. 1976); "National Asphalt Pavement Association v. Train," 539 F. 2d 775, 7834 (D.C. Cir. 1976); "Reserve Mining Co. v. EPA," 514 F. 2d 492, 507 n. 20 (8th Cir. 1975); "Society of the Plastics Industry v. OSHA," 509 F. 2d 1301, 1308 (2d Cir. 1975); "Amoco Oil Co. v. EPA," 501 F. 2d 722, 741 (D.C. Cir. 1974); "Industrial Union Department v. Hodgson," 400 F. 2d 457, 474 (D.C. Cir. 1974). This is especially true in a regulatory program relating to a crucial national need such as energy conservation. "Mobil Oil Co. v. FPC," 417 U.S. 283, 318 (1974).

Substantial efforts have been made to account for the uncertainties involved in establishing these fuel economy standards. For example, as noted in section III, many of the projections of achievable fuel economy improvements are based on conservative estimates of achievable potential. Further, a safety margin of improvement potential is provided to compensate for any unforeseen contingencies. In addition, it is highly likely that some of the uncertainties inherent in this proceeding will operate to the manufacturers' advantage. For example, future technological developments may lead to greater fuel economy improvements than even the most optimistic of the projections made by the Department.

Given that the Department is required to set standards in an area of some uncertainty, it is appropriate to compare the consequences of erring on either the low or the high side in our judgments. This balancing of risks is quite similar to that conducted by the court in "International Harvester Company v. Ruckelshaus," 478 F.2d 615 (D.C. Cir. 1973), involving the EPA Administrator's 1975 automobile emission standards suspension decision. If the Department's projections err on the low side, one obvious consequence is the lost opportunity to conserve energy, the significance of which needs no further discussion. A less obvious consequence is the removal of the "technology forcing" effect of a strict standard. "Union Electric Co. v. EPA," 427 U.S. 246 (1976). Stringent fuel economy standards are likely to encourage the automobile industry to pursue the development and refinement of technology which can reduce fuel consumption. Standards set at easily achievable levels provide no incentive to pursue the development technologies, such as alternative engines, which have substantial fuel economy improvement potential but which may never reach the market in large numbers unless additional technological refinement is accomplished. DN–37, p. 2 (Federal Energy Administration). On the other hand, the danger involved in setting the standards too high is much less than in the "International Harvester" situation. For example, under the Act, the penalty for noncompliance with fuel economy standards is a monetary civil penalty, the magnitude of which is tied to the extent of the violation. On the other hand, violation of Clean Air Act emission standards might result in enjoining the sale of the noncomplying vehicles, conceivably resulting in an industry shutdown. 42 U.S.C. 1857f–4. Fuel economy civil penalties are assessed at a level of five dollars per vehicle per 0.1 mpg of violation, generally within the capability of the automobile companies to either absorb or to pass on to consumers without substantial sales reduction. 15 U.S.C. 2008. In addition, civil penalties incurred in one year can be offset by credits earned in the previous and subsequent years, as previously noted. Penalties large enough to jeopardize a company's continued viability or generated by forces beyond the company's control can be reduced or eliminated. 15 U.S.C. 2008(b)(3). Finally, the Act provides for amending these standards at any time, where the amendment makes the standards less stringent. See section 502(f) of the Act. If some unforeseen contingency arises which makes the attainability of the standards appear dubious, adjustments can be made. The time frame for making these adjustments is much greater than was the case in "International Harvester." All of the technological improvements assumed in this notice are permitted and expected to be phased-in over several years. If problems arise with respect to the marketability or feasibility of the technology, the problem will appear at the start of the phase-in period for the technology, prior to the time when the industry has made irreversible commitments in that area regarding their entire fleets. This contrasts with the "International Harvester" situation where *all* automobiles would have been required to make major technological steps in a single year. Thus, a balancing of the risks involved in setting the standards indicates that less damage is incurred by erring on the high side. In that case, corrections can be made with limited adverse impacts. If the error is on the low side, that error may never become apparent, since additional research efforts would not be fully pursued, and the damage could be irreparable. This counsels against any major reduction in the standards to account for "uncertainties," especially given the safety margin.

## VII. Impact of Petroleum Consumption

Section 6 of the Rulemaking Support Paper and section III of the Economic Impact Statement contain discussions of the impacts on petroleum consumption of various fuel economy standards schedules. The RSP concludes that gasoline savings ranging from approximately 9.6 billion gallons per year in 1985 to about twice that amount in the year 1995 are achievable. See Table 6.6, RSP. Over the lives of the passenger automobiles produced in model years 1981–84, gasoline savings of approximately 41 billion gallons would result. These gasoline savings are calculated in relation to a baseline of the gasoline consumption which would have resulted had the new passenger automobile average fuel economy remained at a level of 20 mpg for the year 1980 and thereafter. This baseline was selected because it coincides with the level of the statutory 1980 fuel economy standard, it is consistent with the level of average fuel economy likely to have been voluntarily achieved by the manufacturers, and its use was supported by at least one participant in the proceeding. Tr–II, p. 96; DN–15, Document III, p. 2 (Ford). To put this fuel savings in perspective, the resulting reduction in petroleum consumption could result in a cumulative national savings of approximately 25 billion dollars by the year 1995, at an assumed petroleum price of $13.50 per barrel. See RSP Table 6.7.

## VIII. Economic Impact of the Standards

The economic impact of these standards was independently evaluated in accordance with Internal Regulatory Procedures by the NHTSA Office of Planning and Evaluation. This assessment utilizes the assumptions set forth in the RSP and expands upon the analyses in that document. That is, the RSP shows cumulative impacts from 1977 for all fuel economy improvements while the Economic Impact Assessment reflects changes from MY 1980 vehicles due solely to improvements necessary to meet the rule.

To summarize the Economic Impact Assessment, the total change for the Domestic Auto Industry for model years 1981–84 (from a base of MY 1980 and 20 mpg) due to the rule are estimated as follows:

Gasoline consumption for the average vehicle manufactured in MY's 1981–84 will be reduced by approximately 1100 gallons for a total lifetime savings of 1.2 billion barrels; consumer lifetime gasoline costs (at 65 cents per gallon) will be reduced by $640 per car, retail prices will increase by about 3 percent or $175 per car; total consumer costs (that is, retail prices, maintenance costs, and gasoline costs) are anticipated to decrease by about $450 per car or $20 billion nationally. The domestic industry extraordinary capital requirements are anticipated to increase by $3 billion, new car sales may decrease by about .4 percent or a total of 155,000 vehicles, and total industry employment is estimated to rise by 77,000 jobs due to extraordinary capital expenditures. Most of these impacts can be considered insignificant with the exception of the reduction in gasoline consumption and possibly the increase in industry capital requirements, should sales decline for several years due to unforeseen events.

Sensitivity analyses performed on several of the variables used in the analysis show little change in results. Thus, these results are good approximations of the impacts to be expected from the rule.

It is recognized that the economic projections made in the Department's various economic analyses are subject to possible changes in the national economy and in the structure of the industry, which no one is presently able to predict with perfect accuracy.

IX. ENVIRONMENTAL IMPACT

A detailed analysis of the environmental impacts associated with various alternative fuel economy standard schedules for the 1981–84 period was conducted, consistent with the requirements of the National Environmental Policy Act, 42 U.S.C. 4321, et seq. The analysis concluded that the national goals of a better environment and of energy conservation are generally compatible, in that measures which tend to conserve energy also tend to be beneficial to the environment. The most obvious environmental benefits associated with these standards are the conservation of scarce resources such as petroleum and the various metals which presently go into the automobiles, and the reduction of pollution associated with the extraction and processing of those materials. Most areas of possible adverse environmental impacts, such as the pollution associated with the increased use of lightweight materials, are offset by reductions in pollution associated with the items replaced. The most significant possible exception to this is the still unresolved issue of the generation and potential for control of presently unregulated pollutants from diesel and other alternative engines. The Department has not based its standards on the use of alternative engines at this time primarily for that reason. However, the issue of the environmental impacts associated with the various alternative engines is of major importance, and the EPA is pursuing the matter now.

X. SAFETY IMPACT

The NPRM raised a question regarding the impact of occupant safety of downsizing passenger automobiles as a result of the fuel economy standards. Depending upon the assumptions made, reasonable conclusions can be made that there will be little net safety impact or, alternatively that there will be a significant adverse safety impact.

A major reason for suggesting that downsizing might have a significant adverse safety impact is the physical law of conservation of momentum, which indicates that when objects of different mass collide, the smaller object will experience a greater change in velocity than the larger one. DN 18, Att. VII, p. 4 (GM). There, in a collision between a small automobile and a large one, the occupants of the smaller one may collide with the vehicle interior with a greater velocity than would be the case for the occupants of the larger automobile, assuming that seat belts were not used. A further advantage which large automobiles may have is that their additional size may provide for additional energy-absorbing crush space outside the occupant compartment, which may allow the energy of a crash to be dissipated in a manner less injurious to the occupants.

On the other hand, accident information appears to indicate that the chance of injury in single car crashes is not appreciably greater in a small car than in a large car. The reduction in vehicle weight and size will apparently be offset to a substantial degree by the reduction in the range of passenger automobile weights which is projected to occur as the larger automobiles are downsized. Further, smaller automobiles may have certain advantages in terms of accident avoidance which tend to offset their possible disadvantages. One such advantage related to the "target-projectile" effect. See Docket No. FE-76-01-GR-7, p. 40-2 (Mr. Stanley Hart). This effect results from the fact that the larger an automobile is in relationship to a road lane, the more likely it is to hit or be hit by anything else within that lane, and the more likely it is to veer outside its assigned lane because of the reduced margin for error. A corollary to this is the increased ability of a small automobile to maneuver within its lane to avoid other automobiles. Docket No. FE-76-01-GR-8, p. 9 (Prof. P. L. Yu, *et al.*). Furthermore, although the shielding effect of vehicular weight may be an indicator of an automobile's protective ability, that same weight also serves as a weapon with respect to other automobiles and pedestrians. Thus, additional weight in vehicles may be a benefit to the occupant of that particular vehicle but a detriment to other drivers and pedestrians.

Available technology provides the means to argue that the downsized automobile fleet of the 1980's will be as safe, or safer, than the fleet of today. The Department has statutory responsibility under the National Traffic and Motor Vehicle Safety Act to issue motor vehicle safety standards that meet the need for motor vehicle safety. The estimates of fuel economy penalties due to Federal motor vehicle safety standards presume the existence of standards that will yield safety improvements which more than offset any net safety impacts due to reduced vehicle size or weight (see RSP)

The above conclusions should not be construed to mean that passenger automobiles are or will be as safe as possible. Among the actions that could be taken to improve the safety characteristics of future automobiles are techniques described in Volvo's response to the May 10, 1977, special order, such as the use of energy-absorbing structural designs. DN-28-02, p. 11 and Attachment. These techniques could be implemented concurrently with the vehicle redesign which occurs as part of the downsizing process. When representatives of the two largest domestic manufacturers were asked at the fuel economy hearing whether their companies planned to incorporate such techniques as part of the redesign process, they responded that they would do whatever was necessary to comply with applicable safety standards, but presumably no more. Tr-II, p. 86 (Ford) and 187 (GM). The Department encourages the various automakers to consider techniques such as those described by Volvo when present passenger automobiles are redesigned.

XI. 1981–1984 PASSENGER AUTOMOBILES

The passenger automobiles produced during the 1981–84 period will differ significantly from those presently produced. These differences will result not only from the requirements of the Motor Vehicle Information and Cost Savings Act, but also from requirements in the areas of safety and emission control and from market and other forces. It is therefore appropriate to discuss in general terms the implications of all these requirements for the driving public with particular emphasis on the energy-related changes.

The President has recently stated that the nation's energy situation will require actions and possible sacrifices on the part of all citizens. In that context, any sacrifices required of the driving public as a result of these fuel economy standards appear insubstantial, mainly requiring the curtailment of wasteful automotive designs and technology. Such measures reduce the need for additional and possibly severe methods of conserving gasoline, such as reducing vehicle usage, and thus preserve the most important value of passenger automobiles, their contribution to public mobility. In fact, the Department believes that passenger automobiles produced in the 1981–84 period have the potential to be superior overall products as compared to their present counterparts. These future vehicles have the potential to be superior not just from the standpoint of fuel economy, but also in such important areas as emission control and occupant safety, and in terms of technological sophistication and overall reliability. Statements to the effect that 1981–84 fuel economy standards would necessarily force the entire new car buying public into cramped, spartan, 4-seat subcompacts are clearly incorrect in the Department's view. For example, the Department projects that if the present General Motors full-size cars with standard engine were modified in accordance with the options listed in section III of this notice in such areas as material substitution (but not downsizing), improved automatic transmission, lubricants, and accessories, and reduced aerodynamic drag and rolling resistance, the fuel economy of those passenger automobiles would be approximately 25 mpg. If some form of alternative engine were used in those automobiles, their fuel economy could rise to over 30 mpg.

The most obvious adverse impact of the various changes is that the cost to produce new passenger automobiles will increase. However, the manufacturing cost increases and resulting retail price increases can be held within an acceptable range. Further, these initial price increases are expected to be slight and to be recouped over the life of the automobile, in the form of fuel savings, reduced maintenance expenditures, and societal health benefits from improved emission and safety characteristics. Compared to 1977 automobiles, the net benefit for 1984 automobiles over their lifetime should be more than $1,000.

The Department believes that the 1981–84 passenger automobiles can be designed to have better overall performance characteristics than present ones. The term "performance" is often defined very narrowly as a synonym for high acceleration capability on a straightaway. However, straight-line acceleration is only one aspect of overall driving performance. Other important aspects are maneuverability, handling, reliability, and overall economy of operation. Many of today's passenger automobiles leave substantial room for improvement in these aspects of performance. Compliance with fuel economy standards will create the potential to improve these latter aspects, without major reductions in straight-line acceleration, primarily through the elimination of bulk. The Department's analysis shows that these changes can be accomplished without sacrifice in vehicle roominess and utility. Further changes can be made to future engines. There is no reason to believe that consumers' transportation needs would not be satisfied by such automobiles.

### XII. IMPLICATIONS FOR THE STANDARDS FOR 1985 AND THEREAFTER

For the purposes of this rulemaking proceeding, the Department was constrained to consider standards within a "steady progress" path between the statutorily imposed 1980 standard of 20 mpg and the standard for 1985 and thereafter of 27.5 mpg. However, section 502(a)(4) of the Act authorizes the Department to amend the standard or standards for 1985 and thereafter if it is determined that the statutory level is not in fact the "maximum feasible average fuel economy level" for those years. Our analysis indicates that levels of average fuel economy in excess of 27.5 mpg are achievable in the 1985 time frame. In addition, several areas of additional fuel economy improvement potential deserve exploration. Among these are the impact of whatever new energy legislation ultimately is signed into law on future product mixes, the potential for additional weight reduction through extensive material substitution, and the potential to shift to alternative engines. Because of the limited scope of the present proceeding and time constraints, it was not possible to explore these issues adequately. However, the significant fuel saving potential associated with these items and the high national priority correctly assigned to the need to conserve energy necessitate a consideration of the level of the standards for 1985 and thereafter. Therefore, in the near future the Department will exercise its discretionary authority under section 502(a)(4) of the Act to initiate rulemaking to amend those standards. As part of this rulemaking, it will also be necessary to reconsider the standards promulgated today, to assure that they are set at levels which are both the maximum feasible average fuel economy levels and will result in steady progress toward the selected standard for 1985. However, it is unlikely that the standards for 1981–83 would be significantly revised as part of the reconsideration, given the diminished lead-time for the manufacturers by the time that rulemaking is completed and the need to provide stable planning targets. See Senate Report, *supra*, at p. 21.

(Sec. 9, Pub. L. 89-670, 80 Stat. 931 (49 U.S.C. 1657); Sec. 301, Pub. L. 94-163, 89 Stat. 901 (15 U.S.C. 2002)).

The program official and lawyer principally responsible for the development of this regulation are Stanley R. Scheiner and Roger C. Fairchild, respectively.

STANLEY R. SCHEINER,
ROGER C. FAIRCHILD.

Issued on June 27, 1977.

BROCK ADAMS,
*Secretary of Transportation.*

1. 49 CFR Chapter V is amended by adding a new Part 531 as follows:



AUTHORITY: Sec. 9, Pub. L. 89-670, 80 Stat. 931 (49 U.S.C. 1657); sec. 301, Pub. L. 94-163, 89 Stat. 901 (15 U.S.C. 2002); delegation of authority at 41 FR 25015, June 22, 1976.

### § 531.1 Scope.

This part establishes average fuel economy standards pursuant to section 502(a) of the Motor Vehicle Information and Cost Savings Act, as amended, for passenger automobiles.

### § 531.2 Purpose.

The purpose of this part is to increase the fuel economy of passenger automobiles by establishing minimum levels of average fuel economy for those vehicles.

### § 531.3 Applicability.

This part applies to manufacturers of passenger automobiles.

### § 531.4 Definitions.

(a) *Statutory terms.* (1) The terms "average fuel economy," "manufacture," "manufacturer," and "model year" are used as defined in section 501 of the Act.

(2) The terms "automobile" and "passenger automobile" are used as defined in section 501 of the Act and in accordance with the determination in part 523 of this chapter.

(b) *Other terms.* As used in this part, unless otherwise required by the context—

(1) "Act" means the Motor Vehicle Information and Cost Savings Act, as amended by Pub. L. 94-163.

### § 531.5 Fuel economy standards.

(a) Each manufacturer of passenger automobiles shall comply with the following standards in the model years specified:

| Model year: | *Average fuel economy standard (miles per gallon)* |
|---|---|
| 1978 | 18.0 |
| 1979 | 19.0 |
| 1980 | 20.0 |
| 1981 | 22.0 |
| 1982 | 24.0 |
| 1983 | 26.0 |
| 1984 | 27.0 |
| 1985 and thereafter | 27.5 |

### § 531.6 Measurement and calculation procedures.

(a) The average fuel economy of all passenger automobiles that are manufactured by a manufacturer in a model year shall be determined in accordance with procedures established by the Administrator of the Environmental Protection Agency under section 502(a)(1) of the Act and set forth in 40 CFR Part 600.

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